



Instruction and Reference Guide

Model BLCJ18



FOR THE LOVE OF SEWING

To register your machine warranty and receive Baby Lock product updates and offers, go to www.babylock.com/profile. If you have questions with registration, visit your Authorized Baby Lock Retailer.

Baby Lock Consumer Helpline: 800-313-4110
www.babylock.com

IMPORTANT SAFETY INSTRUCTIONS

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

When using an electrical appliance, basic safety precautions should always be followed, including the following:
Read all instructions before using this quilting machine.
Please keep all packaging and order information for warranty purposes.

DANGER - To reduce the risk of electric shock:

- A quilting machine should never be left unattended when plugged in. Always unplug this quilting machine from the electric outlet immediately after using and before cleaning.

WARNING - To reduce the risk of burns, fire, electric shock, or injury to persons:

- Do not allow to be used as a toy. Close attention is necessary when this quilting machine is used by or near children.
- Use this quilting machine only for its intended use as described in this manual. Use only attachments recommended by the manufacturer as contained in this manual.
- Never operate this quilting machine if it has a damaged cord or plug, if it is not working properly, if it has been dropped or damaged, or dropped into water. Return the quilting machine to the nearest authorized dealer or service center for examination, repair, electrical or mechanical adjustment.
- Keep fingers away from all moving parts. Special care is required around the quilting machine needle.
- Always use the proper needle plate. The wrong plate can cause the needle to break.
- Do not use bent or dull needles.
- Switch the quilting machine off ("0") when making any adjustments in the needle area, such as threading needle, changing needle, threading or servicing the bobbin, etc.
- Always unplug quilting machine from the electrical outlet when removing covers, lubricating, or when making any other user servicing adjustments mentioned in the instruction manual.
- Never drop or insert any object into any opening.
- Do not use outdoors.
- Do not operate where aerosol (spray) products are being used or where oxygen is being administered.
- To disconnect, turn all controls to the off ("0") position, then remove plug from outlet.
- Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
- Never operate the quilting machine if the cord is damaged or not working correctly. If a mechanical or electrical problem is encountered, return the quilting machine to the nearest

SAVE THESE INSTRUCTIONS

GROUNDING

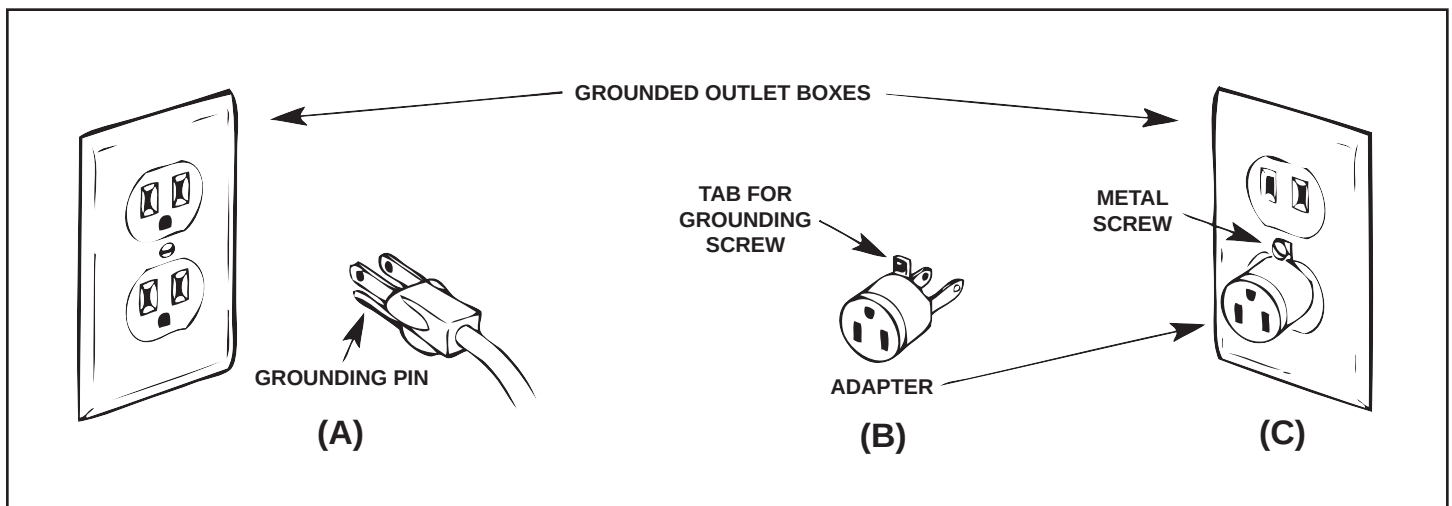


Figure 1

This product is for use on a nominal 120 V or nominal 220 V circuit, and has a grounding plug that looks like the plug illustrated in sketch A in Figure 1. A temporary adapter, which looks like the adapter illustrated in sketches B and C, may be used to connect this plug to a 2-pole receptacle as shown in sketch C if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green colored rigid ear, lug, and the like, extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box cover. Whenever the adapter is used, it must be held in place by the metal screw.

Note: In Canada, the use of a temporary adapter is not permitted by the Canadian Electric Code.

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Baby Lock Crown Jewel Quick Facts

Sewing Speed	Approximately 1,800 spm
Minimum Sewing Speed	90 spm
Needle Bar Stroke	35.3 mm
Sewing Foot Stroke/Lift	5 mm
Needle System	135x7 Standard
Needle Sizes	14/90 – 20/120
Lubrication, main components	Kluber Lube, permanent
Lubrication, hook	Velocite 10, Texaco 22
Dimensions of Sewing Machine Throat	8.25" x 18.00"
Rate Voltage/ Power Consumption	120 volts, 60 Hz 300 watts
Power Consumption of LED Lights	10 watts
Hook System	Custom Manufactured, Rotary, Large Bobbin
Bobbin Type	Class M
Motor Type	Brushless DC, Internal Encoding
Automatic Needle Positioning	Up and down, full-stitch and half-stitch
Cluster Lights	LED lights

Baby Lock Crown Jewel Disclaimer

Baby Lock and its authorized retailers are not legally responsible or liable for damage to the Baby Lock Crown Jewel when used improperly or not in accordance with the guidelines stated in this manual or when used on Home Machine Quilting Frames not recommended by Baby Lock.

For additional product information, visit our website at: www.babylock.com.

Home Machine Quilting Frame Recommendation

- **Grace Pinnacle Frame**
- **Grace Majestic Frame**

Baby Lock Crown Jewel Safety Section

NOTE: Do not operate your Baby Lock Crown Jewel quilting machine until you have completely read the information contained in this manual. Please keep all packaging and order information for warranty purposes.

- 1. Always unplug** the Baby Lock Crown Jewel from the electric outlet when performing any maintenance, changing the needle, removing thread locks, or when left unattended.
- 2. Keep fingers away** from all moving parts. **Use caution** around the needle or sharp external components.
- 3. Change the needle often.** Do not use bent or dull needles.
- 4. Switch the power off** when making any adjustments in the needle or bobbin area, such as threading the needle, installing the bobbin case, oiling or when cleaning.
- 5.** Never drop or insert **foreign objects** into any opening.
- 6.** The Baby Lock Crown Jewel should only **be used indoors** away from moisture.
- 7.** The Baby Lock Crown Jewel should not be stored or used in **extreme temperatures**.
- 8. Use the Baby Lock Crown Jewel** only for its intended use as described in this manual.
- 9.** Use only **attachments recommended** by the manufacturer in this manual.
- 10. To disconnect from the wall outlet**, push the switch to the off position, then remove the plug from outlet pulling from the plug, not the cord. Never operate the Baby Lock Crown Jewel if the cord is damaged in any way. If a mechanical or electrical problem is encountered, please consult local authorized Baby Lock retailer.

Package Contents /Included Accessories

Part Name

Part Code

Box 1 of 4

Baby Lock Crown Jewel Quilting Machine / Stitch Regulator	BLCJ18
User Manual	IBBLCJ18
Class M Bobbins (5 pieces)	BLJ-BOB (3 pkg.)
Needle size 16 (1 pkg. of 10)	134FG-100
Needle size 18 (1 pkg. of 10)	134FG-110
Bobbin Case	JW000586
Thread Mast	JW010214
Oiler	JW010272
Power Cord	JW020277
Brush	JW010270
Disc-shaped Screwdriver	XC1074051
Screwdriver (bobbin case)	JW010269
3.0mm Allen Wrench	JW010287
5.0mm Allen Wrench	JW010289
Laser Stylus and Clamp	JW020259
Laser Stylus Post	JW010290



Figure 5 shown on page 10

Figure 6 shown on page 11

Box 2 of 4

Front Handles	JW029418
Rear Handles	JW029388

Box 3 of 4

Variable-Speed Bobbin Winder	JW029307
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Figure 1 shown on page 37

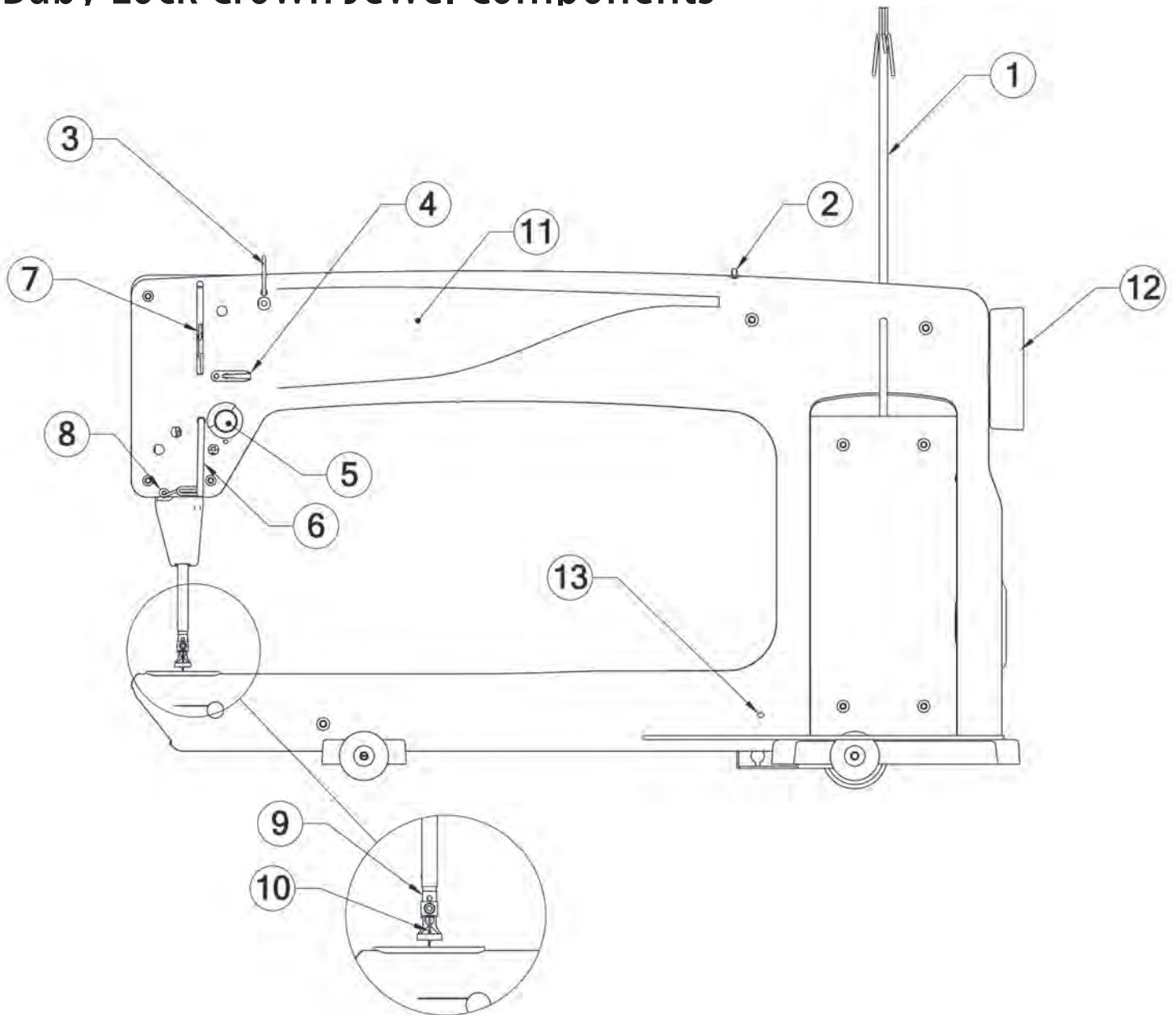
Box 4 of 4 (Contains one only)

Carriage for Pinnacle Frame	BLCJ18D1
or	
Carriage for Majestic Frame	BLCJ18D2

Optional Accessories

Part Name	Part Code	
Adaptor Plate/Stylus Holder	BLJ18-SA	Shown on page 41
Channel Lock	BLJ18-CL	Shown on page 40
Cluster Lights (pkg. 2)	BLJ18-L	Shown on page 11
Horizontal Spool Pin	BLJ18-HS	Shown on page 42
Needle size 20 (1 pkg. of 10)	134FG-125	Shown on page 4
Quilt Pattern Boards	Various	Not shown
Ruler Base	BLJ18-RB	Shown on page 40
Stylus	BLJ18-ST	Shown on page 41
Micro Handles	BLJ18-MH	Shown on page 42

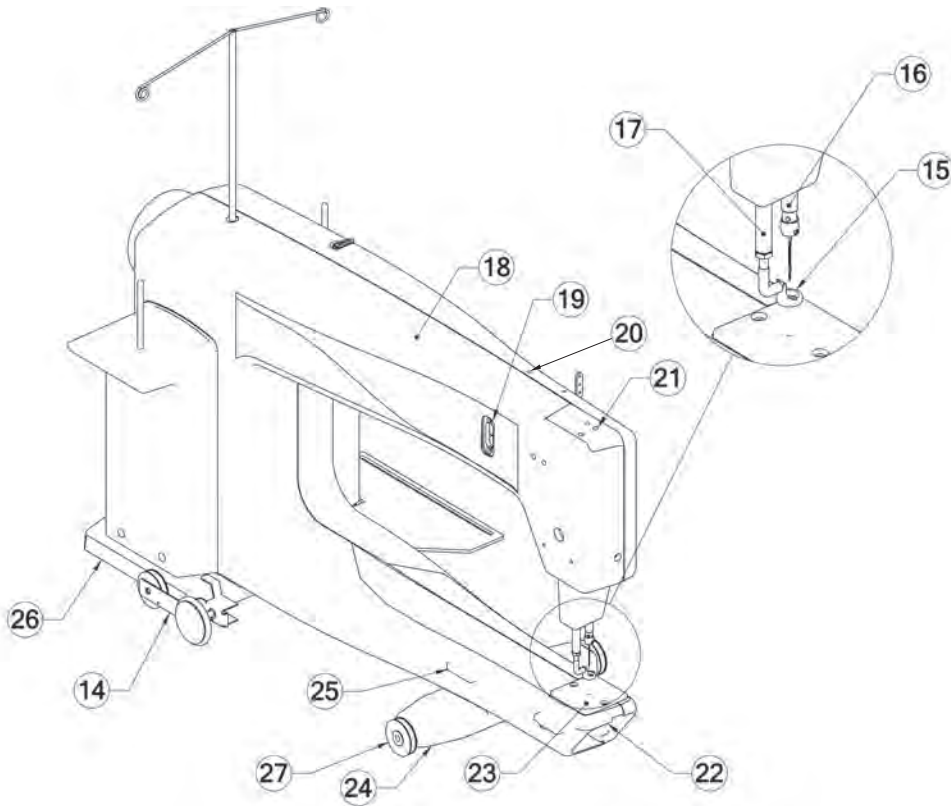
Baby Lock Crown Jewel Components



Front-Side Diagram A

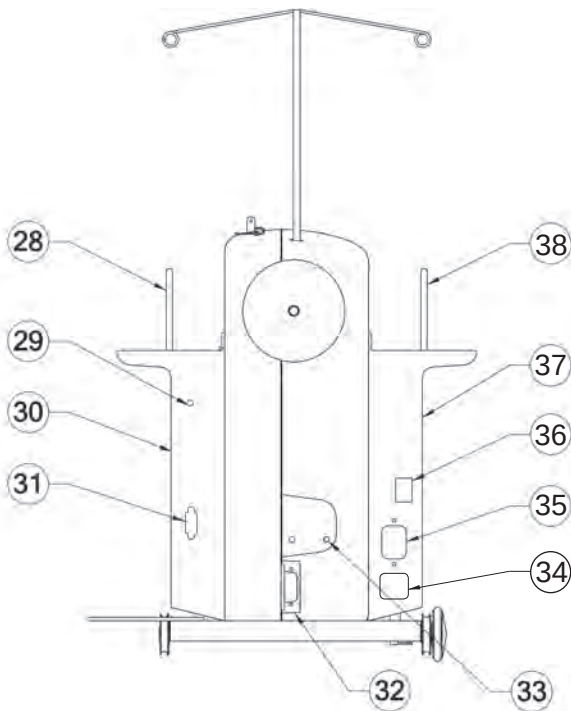
- | | |
|------------------------------|---------------------------------|
| 1. Thread Mast | 8. Thread Guide E |
| 2. Thread Guide A | 9. Needle Bar Thread Guide |
| 3. Three Hole Thread Guide B | 10. Needle |
| 4. Thread Guide C | 11. Front Casing/Frame |
| 5. Tension Assembly | 12. Handwheel |
| 6. "Stirrup" Thread Guide D | 13. Side Laser Stylus Post Hole |
| 7. Take Up Lever | |

Baby Lock Crown Jewel Components continued



Back-Side Diagram B

- 14.** Machine Stitch Regulator (Y-Motion)
- 15.** Hopping Foot
- 16.** Needle Bar
- 17.** Presser Bar
- 18.** Back Casing/Frame
- 19.** Front Handle Serial Port Connector
- 20.** Top Laser Stylus Post Hole
- 21.** Front Threaded Handle Holes
- 22.** Bobbin Assembly
- 23.** Needle Plate
- 24.** Front Base Plate
- 25.** Oval Position Guides
- 26.** Rear Base Plate
- 27.** Wheels (4)



Rear Diagram C

- 28.** Spool Pin 1
- 29.** Laser Stylus Power Connector
- 30.** Front Electronic Control Cover
- 31.** Serial Port for Stitch Regulator
- 32.** Rear Handle Serial Port
- 33.** Rear Threaded Handle Holes
- 34.** Accessory Power Outlet
- 35.** Power Cord Connector
- 36.** On/Off Switch
- 37.** Back Power Cover
- 38.** Spool Pin 2

Installing Machine on Carriage

1. Place the carriage on the table rails ensuring that the carriage stitch regulator assembly is toward the back of the table (**Figure 1**).
2. The stitch regulator, machine and carriage are connected by a ribbon cable that has 3 connectors (**Figure 3, page 9**). The machine should arrive from the factory with the ribbon cable already attached by Connectors A and B. The remaining end, Connector C, will be connected in Step 4.

IMPORTANT NOTE: Very carefully remove the plastic wire tie securing the Carriage Stitch Regulator Assembly (X-Motion) **after** the carriage is placed onto the tracks of the quilting frame (**Figure 2**).

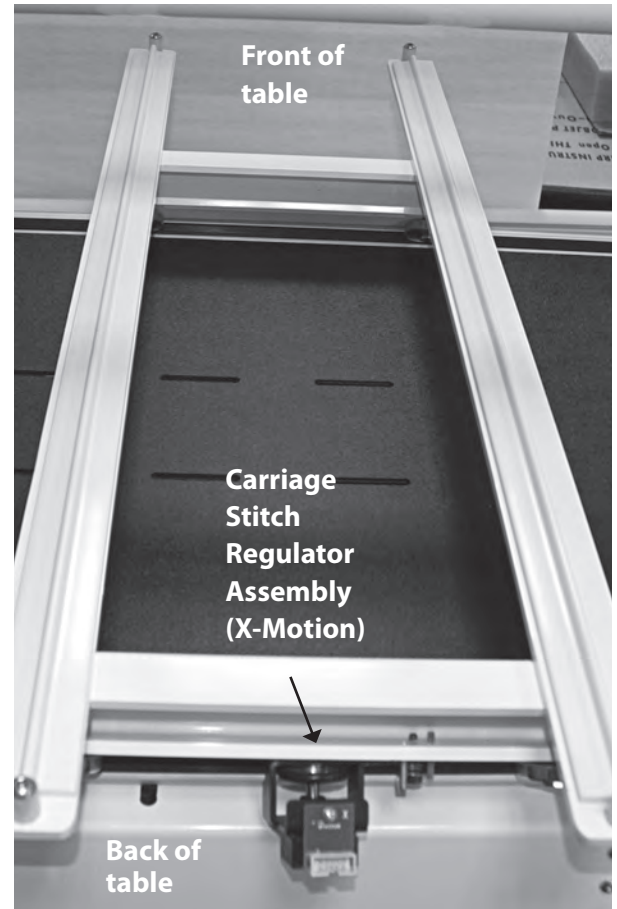


Figure 1



Figure 2

NOTE: Connector A is a serial port connector and connects at position 31 as seen in (**Rear Diagram C, #31 page 7**). Connector B connects to the machine stitch regulator assembly (Y-Motion) shown in (**Back-Side Diagram B, #14 page 7**), as well as (**Figure 4**). If these two connections have come loose in shipping, reconnect them before proceeding to step 3.

- 3.** Place the machine on the carriage, with the front of the machine toward the front of the table and all wheels on the carriage rails.
- 4.** Plug final ribbon cable Connector C into the carriage stitch regulator assembly (**Figure 1**).

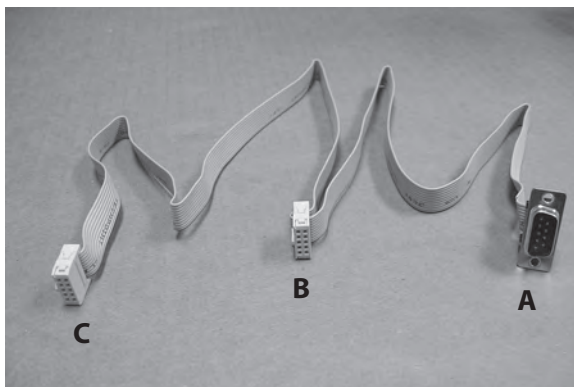


Figure 3

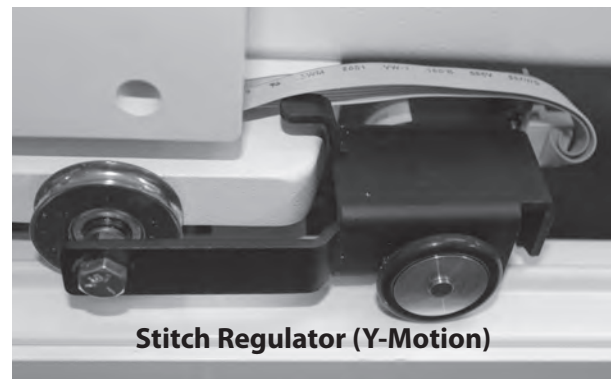


Figure 4

Installing Front Handles

CAUTION: Unplug the Baby Lock Crown Jewel from the electrical outlet. All power to the machine must be turned off when installing the front handles. Failure to do so can result in damage to the machine.

IMPORTANT NOTE: Care must be taken to not pinch the ribbon cable under the handle when it is tightened to the machine.

Locate the three longest Allen screws and the 5.0mm Allen wrench. To install the handles, tilt the screen forward. Line up the three holes on top of the handles with the pre-drilled holes on top of the machine. Slide a star washer onto the Allen screw, then slide a bolt into each hole until it stops. Hand tighten, and then use the 5.0mm Allen wrench to securely fasten the handles to the machine (**Figure 4**).

Once the Allen screws are in place, plug the ribbon connector into the serial port on the left-hand side of the machine (**Back-Side Diagram B, #19 on page 7**). Make sure the pins are lined up so they are not damaged when the plug is pushed in. Push the plug securely in place.



Figure 4

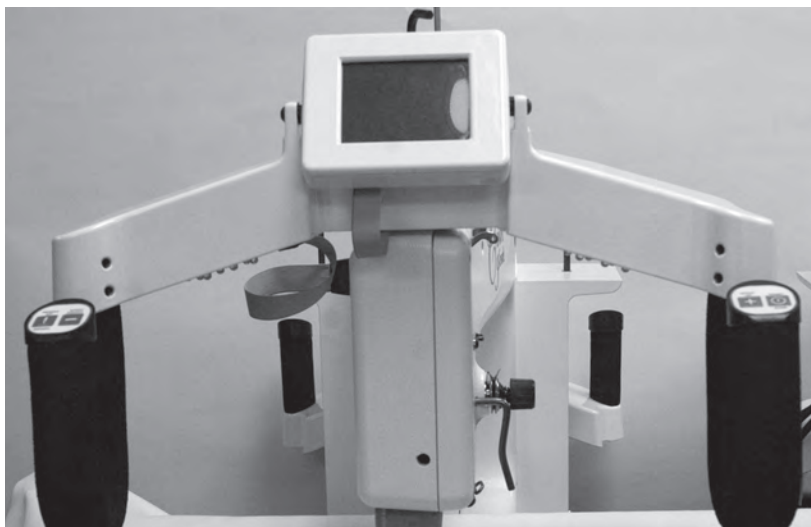


Figure 5 (View of Front Handles)

Installing Rear Handles

CAUTION: Check that the Baby Lock Crown Jewel is unplugged from the electrical outlet. All power to the machine must be turned off when installing the back handles. Failure to do so can result in damage to the machine.

IMPORTANT NOTE: Care must be taken to not pinch the ribbon cable under the handle when it is tightened to the machine.

The rear handles already come mounted by three Allen screws into an “L” bracket. Line up the two holes in the “L” bracket with those on the rear of the machine. Slide the two short Allen screws into holes until they stop. Hand tighten, and then use the 5.0mm Allen wrench to securely fasten the handle to the back of the machine.

Once the two Allen screws are in place, plug the 9-pin ribbon connector into the serial port underneath the rear handle (**Rear Diagram C, #32 page 7**). Ensure the pins are lined up so they are not damaged when the plug is pushed in. Push the plug securely in place.

NOTE: After the handles have been completely installed and plugged in, test them by turning the Baby Lock Crown Jewel on/off switch to “on”. The handles will run a self-test by briefly displaying their version during boot up, and then the LED lights on the front handles will illuminate. After the boot up is completed, both LCD displays (front handle and rear handle) will display the same menu. If nothing is displayed or if the lights don’t illuminate, check that the handle cable on the side of the machine is plugged in securely, that your machine is turned on, and that the power cord is plugged into the machine as well as a power source.



Figure 6 (View of Back Handles)

Cluster LED Pin Light Installation and/or Replacement

The Cluster LED (**Figure 7**) pin lights are located on the underside of the front handles. While LED lights have a very long life expectancy, occasionally you may need to replace one

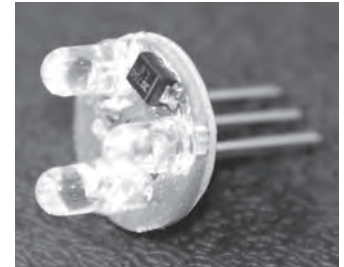


Figure 7

or you may choose to add more Cluster LED pin lights for additional lighting (available from your Baby Lock retailer). You may add up to 10 additional LED Clusters on the front handles if desired.

Removal:

1. Shut off the power to the machine.
2. Grasp the Cluster LED pin light by the base of the cluster with your fingertips.

NOTE: Do not grasp the LEDs themselves, as they may break.

3. Pull straight downward without twisting (slight rocking back and forth may be required).
4. If you are unable to remove the lights with your fingers, you may use an extraction tool or a pair of needle-nose pliers to carefully grasp the base of the light cluster and pull downward.

Installation:

1. Shut off the power to the machine.
2. Insert the new Cluster LED pin light, matching the three pins with the three holes in the receptacle (orientation is not critical).
3. Press firmly until the LED pin light is fully inserted (the base will be against the metal closing plate of the handle).

Inserting (or Changing) the Needle

1. Move the needle bar to the highest position by turning the handwheel counterclockwise or pressing the needle up/down control on the handles.

2. Turn all power to machine off.

3. Loosen the needle bar clamp screw with the appropriate screwdriver (**Figure 8**).

4. Referring to Diagram D, with the scarf (small recess area on the back side of the needle, just above the needle eye) facing toward the rear of the machine (handwheel location) and the long groove down the front of the needle facing the front of the machine (bobbin case location), push the needle all the way up into the needle bar until it stops. Check the sight opening to verify that the top of the needle can go no farther.

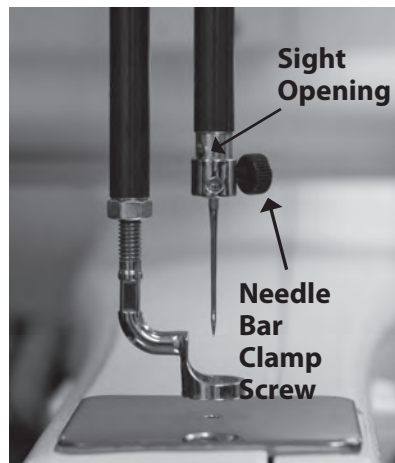


Figure 8

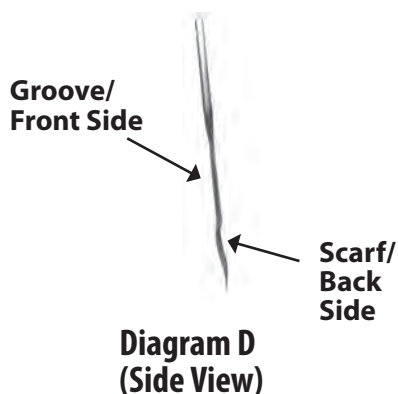


**Diagram D
(Side View)**

IMPORTANT NOTE: Check the needle to confirm it is fully inserted. The needle bar has a sight opening above the needle bar clamp screw—make sure the needle is touching the top of the sight opening. If it is not, the machine timing will be off and it may be possible for the needle to collide with internal parts causing damage not covered by warranty.

5. *Carefully* tighten the needle bar clamp screw. Over tightening the needle clamp screw will result in damaging the screw by stripping the threads. Stripped threads are not covered under warranty. A side effect of damaged threads from over tightening the needle clamp screw is that it may become difficult to insert the needle properly into the needle bar. To avoid over tightening the screw, while using the screwdriver, is once the screw no longer turns freely is to then gently turn the screwdriver until the screw is tightened snugly.

NOTE: Changing the needle is recommended for each new quilt loaded on the machine or any time the needle becomes bent, dull or burred.

Needle Guide

Needle size	Thread size
16	monofilament, hologram 100 wt. silk, 60 wt. poly, 50 wt. poly, 50 wt. cotton, some 40 wt. threads
18	40 wt. cottons and poly, 30 wt. cottons and poly
20	Any thread 30 wt. and heavier such as 12 wt., 19 wt., 30 wt.

CAUTION: Never leave machine unattended when plugged in. Always unplug this machine from the electrical outlet immediately after using and before maintenance.

Installing the Power Cord

NOTE: Please make sure that the machine is in the “O” or off position before plugging into power source.

Insert the cord into the top power connector on the rear of the machine. Plug the three-prong end into power source (**Figure 9**).

The lower power connector is for powering other attachments. (For future development)



Figure 9

Installing the Thread Mast

Locate the threaded hole on top of the machine near the rear by the handwheel. The thread mast comes with the washer and nut on it. Remove the nut and washer, replace the nut onto the mast and then place the washer under the nut and onto the machine painted surface. The washer protects the painted surface when the nut is tightened. Tighten the mast clockwise until it is securely in place. Use the nut to secure the mast to the machine.

NOTE: The eyelets of the thread mast *must* be centered over the spool pins—so the cone will not pull, turn or tilt, causing thread tension problems (**Figure 10**).

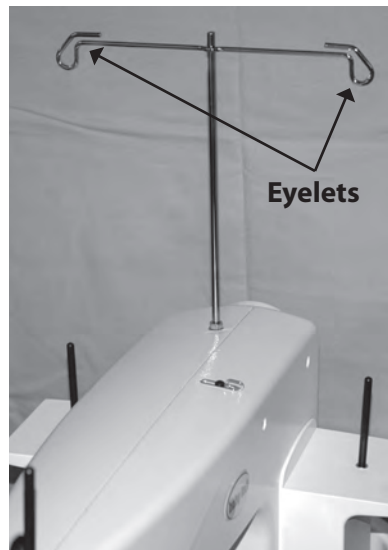


Figure 10

Laser Stylus Safety and Use Guidelines

Theory of Operation

The laser stylus projects a straight laser beam visible as a dot on surfaces it hits. The laser dot is used as a guide or stylus allowing you to stitch the same pattern onto a quilt that is being traced with the laser dot.

Laser Operation and Use

There is not a separate on/off switch for the laser. Power is supplied to the laser when it is plugged into the Baby Lock Crown Jewel. Be sure the laser is attached to the Baby Lock Crown Jewel and pointed downward toward the table before connecting it to the port. Never point it in a direction that would project the beam into someone's eyes. If the laser should cease to operate, check to ensure the plug is firmly seated into the Baby Lock Crown Jewel laser port.

Laser Focus/Laser Image Size

This high quality laser is focusable. The laser is focused by simply grasping the threaded housing surrounding the lens and turning clockwise or counter clockwise (**Figure 11**). (If you cannot see this threaded housing, it may be threaded too far into the lens area. Take an appropriate size screwdriver and turn counter clockwise so the housing is visible, you can then turn with your fingertips.) The laser image can be adjusted bigger or smaller. The direction of rotation needed is determined by the distance of the laser from the intended focal plane. Experiment by turning the threaded end to achieve your desired focal size.



Figure 11

Clamp Adjustment

The laser attaches to a mounting post. The post may be vertical (installed on the top side, at the front of the machine, in the post hole (**Back-Side Diagram B, #20 page 7**) or horizontal (installed toward the right back of the machine in the hole marked as (**Front-Side Diagram A, #13 page 6**)). The Laser Stylus is designed to articulate any direction by rotating the clamp on the post and pivoting the laser up or down. To make an adjustment, simply loosen the black thumbscrews, position, and retighten.

Location of Laser Labels

The label is attached to the case of the laser and contains an arrow which indicates the direction the laser light will shine when energized. The label must remain in place on the laser. **IMPORTANT NOTE:** Removal of the label will void the laser's warranty.

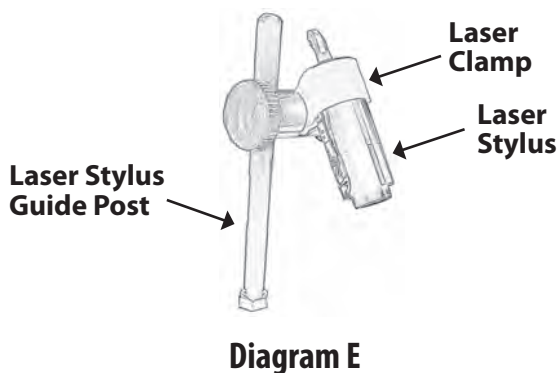
Installing the Laser Stylus

CAUTION LASER SAFETY:

When using the Laser Stylus, basic safety precautions should be taken.

- Never shine directly into the eyes.
- The Laser Stylus should never be left on and unattended.
- Laser Stylus is not to be used as a toy.
- Close attention is necessary when the laser stylus is being used by or near children.
- Use Laser Stylus only for its intended use as described in this manual.

Begin by locating the laser stylus guide post, the laser clamp and the laser stylus (**Diagram E**).



To attach the laser stylus to the top of the machine:

1. Locate the threaded hole on top of the machine near the front (**Back-Side Diagram B, #20, page 7**). The laser stylus guide post comes with the washer and nut already attached. Remove the nut and washer, replace the nut onto the post and

then place the washer under the nut and onto the machine against the painted surface. The washer protects the painted surface when the nut is tightened. Tighten the post clockwise until it is securely in place. Use the nut to secure the post to the machine.

2. Be sure the laser stylus is inserted securely into the laser clamp.

3. Slide the laser clamp over the post to the desired height and secure by tightening the black thumbscrew.

4. Plug the laser into the top port on the side of the front electronic control cover (**Rear Diagram C, #29, page 7**).

To attach the laser stylus to the side of the machine:

1. Place the nut on the laser stylus guide post with the washer under it and thread the laser guide post into the threaded hole on the front of the machine (**Front-Side Diagram A, #13, page 6 and Figure 12**). Turn until securely in place. Lock in place with lock nut—the washer will be under the nut to protect the machine paint. (An unused spool pin can also be used to mount the laser instead of the Laser Stylus Guide Post, **Figure 12**). Continue by following steps 2-4 above.



Figure 12

Threading the Machine

1. Slide thread (cone or spool) onto spool pin, insert the thread through the thread-mast eyelet from back to front, continuing to **thread guide A**.

2. After inserting thread through thread guide A continue to the three-hole **thread guide B**. Wrap all three holes from back to front, handwheel side to needle side (**Detail 1**) being careful not to cross threads. This is recommended for most threads. However, some very delicate threads or metallic threads may require less tension. If you are having thread breakage problems, try threading only one or two holes.

NOTE: The purpose of this guide is to prevent loops of thread coming off of the thread cone and going into the top tension as a knot, causing thread breakage and bad tension. For most threads on a cone, it is important to thread all three holes for consistent results—should top thread tension need to be adjusted it should be done at the top tension assembly.

3. Thread continues through **thread guide C**, and then down to the **tension assembly** (**Detail 2**).

NOTE: It is important that the thread is “flossed” up between the two tension discs. If the thread is not firmly in place between the two tension discs, the thread will lay on top of the tension discs (no tension) and looping can occur.

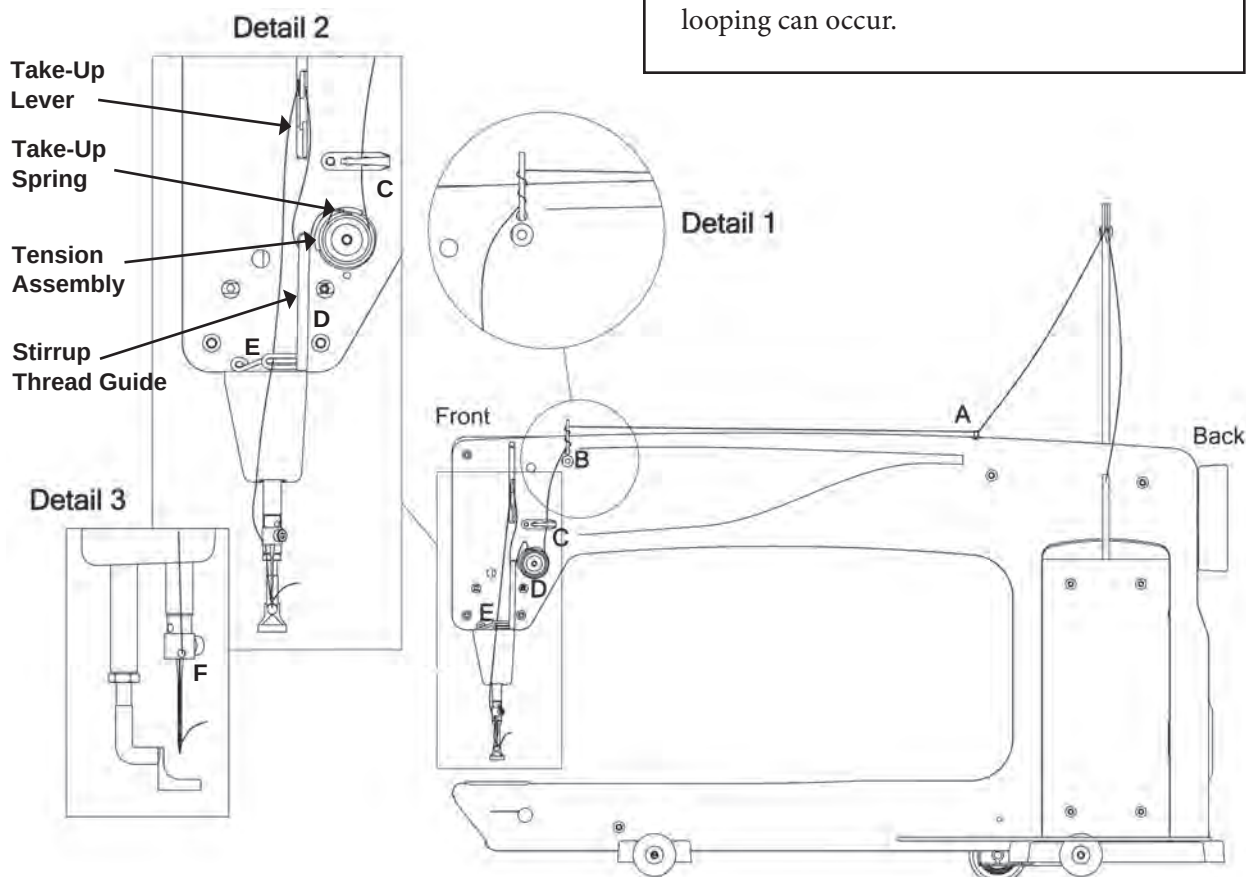


Diagram F

4. Once the thread is in place, be sure that the thread catches on the **take up spring** and then pull it down under the stirrup **thread guide D**.

5. Bring the thread up and through the take-up lever from back to front, and then down through **thread guide E**.

6. Pull the thread down to the **needle thread guide** and thread through the hole (**F in Detail 3**).

7. Make sure the thread is following the groove down the front of the needle and insert thread through the eye of the needle from front to back. While pulling thread through the eye of the needle be careful that the thread does not twist around the needle.

NOTE: Before threading the needle test that the machine is threaded properly and the tension is correct by carefully pulling the top thread. It should pull smoothly with light to medium tension. If thread pulls freely with no tension - rethread the machine.

IMPORTANT NOTES: The Baby Lock Crown Jewel quilting machine does not have a presser foot lever or top tension release like a home sewing machine. On a home sewing machine the top tension is released when the presser foot is raised allowing the thread to come freely out of the machine. When a home machine is threaded the tension discs are released and open to allow the thread to easily fall between the tension discs. This is not the case with the Baby Lock Crown Jewel quilting machine. Consequently the top tension is always tight and the tensions discs are never open. Therefore the thread must be pulled up or “flossed” between the tension discs or it will stay outside the discs and float without tension, causing serious tension problems and/or thread nests. It is also possible to bend the needle while it is threaded if care is not taken while moving the machine around the quilt because the top tension is never released.

Bobbin and Thread Tension Adjustments

NOTE: See pages 37-39 for winding the bobbin.

Insert Bobbin into Bobbin Case

CAUTION: To prevent personal injury always turn off the power switch while inserting and/or removing bobbin case or anytime your hands are near the needle area.

1. Place the bobbin in the bobbin case so that the thread pulls off clockwise when viewing the open side.
2. Slide the thread through the slot and under the tension spring, leaving 5-6 inches of thread hanging loose.



Figure 13

Note: It is not suggested that the lever on the bobbin case be used for this installation. The latch lever should be used only for removal of the bobbin case.

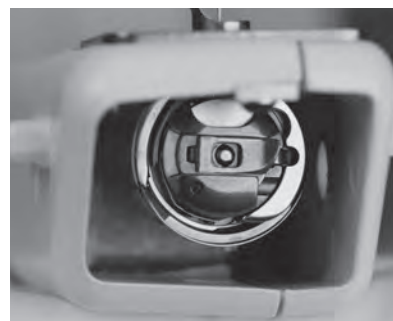


Figure 14

Bobbin Tension

The bobbin tension is the foundation tension for the entire machine. Always set the bobbin tension **first**.

To test that bobbin tension is correct, hold the bobbin case in the palm of your hand with the open end facing up – wrap the thread around the index finger of the opposite hand and while pulling up on the thread move the finger side to side (not up and down which is not consistent), the bobbin case should lift up on its side, but *not* lift out of your hand. If it will not lift up onto its side, it is too loose and if it lifts out of your hand it is too tight.

The small screw in the center of the tension spring is where the adjustment is made (**Figure 13**). Turn clockwise to tighten and counterclockwise to loosen the bobbin case tension.

NOTE: Check the bobbin tension each time a new bobbin is inserted.

Insert Bobbin Case into Machine

- 1.** Turn off the power switch.
- 2. Do not lift the lever** on bobbin case. Fit the bobbin case onto the hook spindle in the machine. Rotate the casing until the open throat keys into the middle notch in the hook. Push the bobbin case inward until it clicks into place (**Figure 14**).

Drawing up the Bobbin Thread to the Top of the Quilt

- 1.** After the machine is threaded, locate needle up/needle down button on the left handle. Move the machine over the quilt to your starting location.
- 2.** While firmly holding the tail of the needle thread, press the needle up/down button with free hand, causing the needle to go down through the fabric and then back to the up position.
- 3.** Move the machine 2-3 inches while holding the needle thread in place.
- 4.** Bobbin thread will pull up through to the top allowing you to grasp the loop and pull it to the desired length.

Maintenance

Top Tension

Puckering, gathers and thread breakage occur when the top tension is too tight. Loops and thread nests occur when the top thread tension is too loose. Tension may need to be adjusted depending on the fabric, thread or batting you are using on each project.

Important: Top tension should be adjusted after the bobbin case foundation tension adjustment is made.

To adjust the top tension tighter, turn the tension knob clockwise. To loosen the tension, turn the tension knob counterclockwise. If the bobbin case tension is adjusted a degree on the screw the top tension may need to be adjusted a $\frac{1}{4}$ to $\frac{1}{2}$ turn to compensate or balance the tension.

Important Note: Before adjusting your top tension remember to floss or pull the top thread up into the tension discs or it will float outside the discs providing little or no top tension. This could cause significant tension or nesting problems on the bottom side of the quilt.

One of the joys of quilting with the Baby Lock Crown Jewel is its ability to handle many different types of threads. You can quilt with almost anything, as long as you first adjust your bobbin tension, and then adjust the top tension to suit the thread you've chosen.

Dark threads will be heavier (because of dye) than light threads of the same weight. The type or brand of thread may also affect tension settings. Each time you change threads, you will need to check your tension.

Cleaning and Lubricating the Machine

Only use light sewing machine oil in the Baby Lock Crown Jewel. Internal oiling is not necessary on the Baby Lock Crown Jewel except when the machine is taken to a service technician for routine maintenance and cleaning. *The bobbin basket assembly, however, needs regular lubricating.* Failure to keep the bobbin assembly lubricated can cause severe damage to the machine. To lubricate, turn off the machine. Clean around the bobbin assembly with a soft brush to remove lint.

Put a very small drop of oil on the hook in the bobbin assembly (**Figure 15**). (Remove bobbin and case before oiling). The frequency depends upon the usage of the machine. Lubricating is recommended before running the machine if it has not been used regularly, or every other bobbin change if used frequently. Always sew a scrap piece as oil may cling to thread. Over oiling can cause excess dripping from the bobbin assembly. Lack of lubricant may be noticed by a change in the sound of the machine and will affect stitch quality.

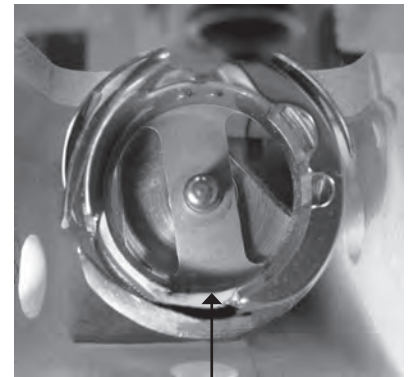


Figure 15

Cleaning the Touch Screen Display

Never use any chemicals to clean your display as this may adversely affect the touch screen response. Use a soft cloth, dampened with isopropyl alcohol and gently wipe the display to remove any marks.

Using the Touch Screen Displays on the Handlebars

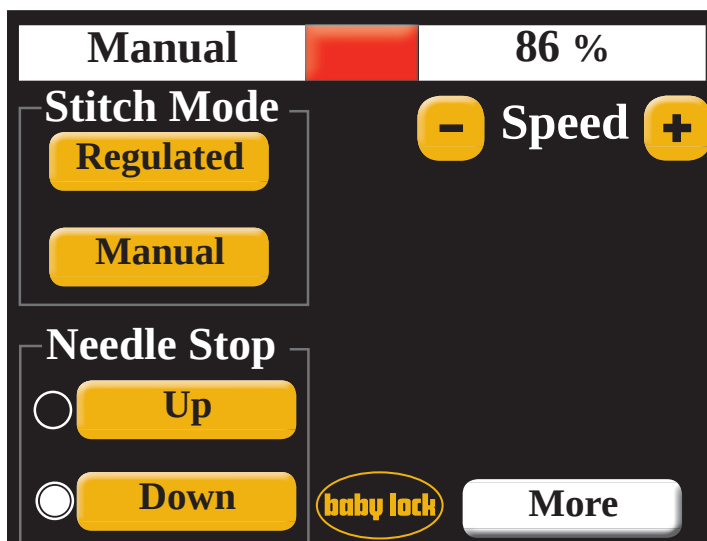


Figure 16

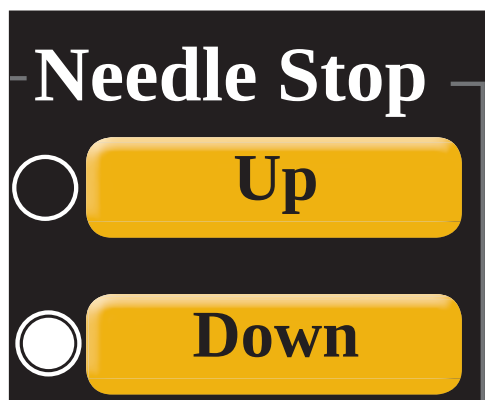


Figure 17

The Baby Lock Crown Jewel has touch-screen displays on the front and rear handlebars. Settings may be changed at either of these locations.

Main Screen

Manual Mode Screen

Button Functions:

Pressing the “Regulated” button while in the Manual Mode Screen will toggle to the Regulated Mode Screen. The current Stitch Mode is displayed at the top left corner of the screen. Different options are available depending upon which mode the system is in. (Figure 16)

Needle Stop

When in “Needle Up” mode (the radio button is white when activated), the needle ends in the “Up” position upon pressing the “Stop” button on the handles. This button does not move the needle, but simply determines the final needle position after the machine has been stopped. (Figure 17)

When in “Needle Down” mode (the radio button is white when activated), the needle ends in the “Down” position upon pressing the “Stop” button on the handles. Again, this button does not move the needle, but sets the final resting position of the needle after “Stop” is pressed.

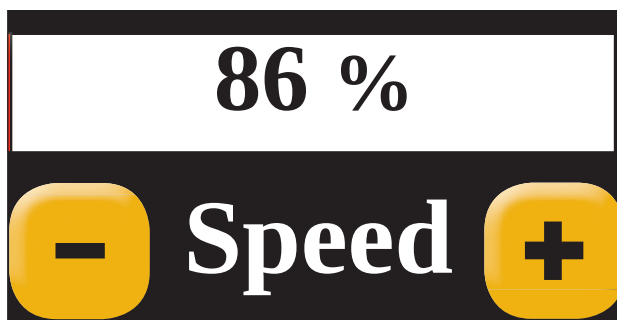


Figure 18



Figure 19



Figure 20

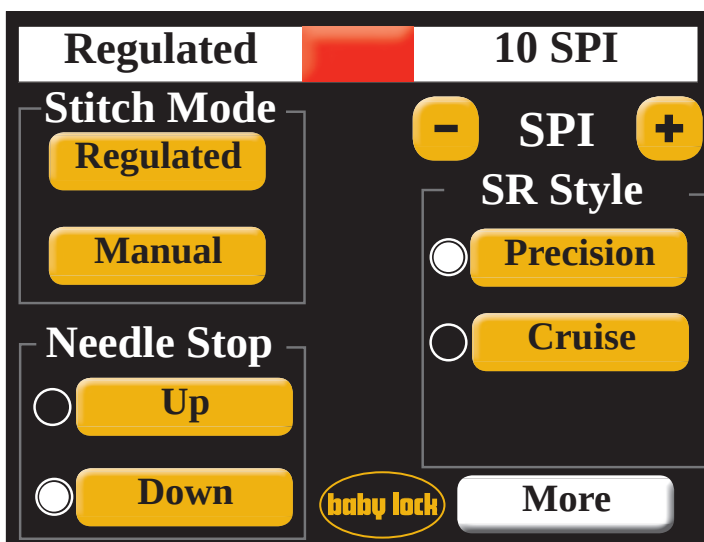


Figure 21



Figure 22

Speed

When Manual is selected within the Stitch Mode the motor speed can be increased or decreased by pressing the Speed “+” or “-” buttons. To increase the Manual Mode motor speed press the Speed “+” button. To decrease speed press the Speed “-” button. This has the same effect as pressing the “+” or “-” buttons on the machine’s handles. The speed range is between 5% and 100%, or between 100 and 1800 stitches per minute (SPM). The percent speed is displayed in the white box located at the top right side of screen. Stitches per minute (SPM) is not displayed within the machine’s software. (Figure 18)

More

The “More” button will access the “More” menu screen, which allows access to lighting options, sound options, diagnostics menus, system information and a calculator. (Figure 19)

On/Off Indicator

The box in the center of the top bar turns green when you press the “Start” button on the handles to indicate the needle is in motion. When you press “Stop,” the box will turn red. (Figure 20)

Regulated Mode Screen Button Functions Stitches Per Inch (SPI)

Pressing the “+” or “-” buttons near the top right portion of the screen will increase or decrease the stitches per inch (SPI) setting. The setting is reflected in the white indicator box at the top right portion of the screen. This value can be adjusted between 4 and 18 stitches per inch. (Figure 21 & 22)

Stitch Regulated Style (SR)

The “SR Style” box locate in the middle right-hand side of the screen indicates whether the machine is in “Precision” regulated mode or in “Cruise” regulated mode. (Figure 22)

Precision

If “Precision” mode is selected, the Baby Lock Crown Jewel will begin stitching only after the Start button is pressed and you begin to move the machine. (Figure 23 on next page.)

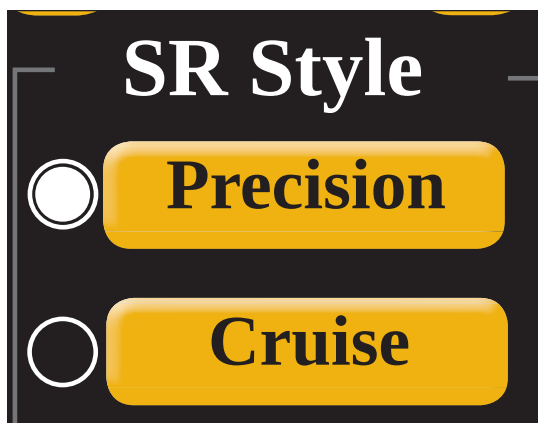


Figure 23

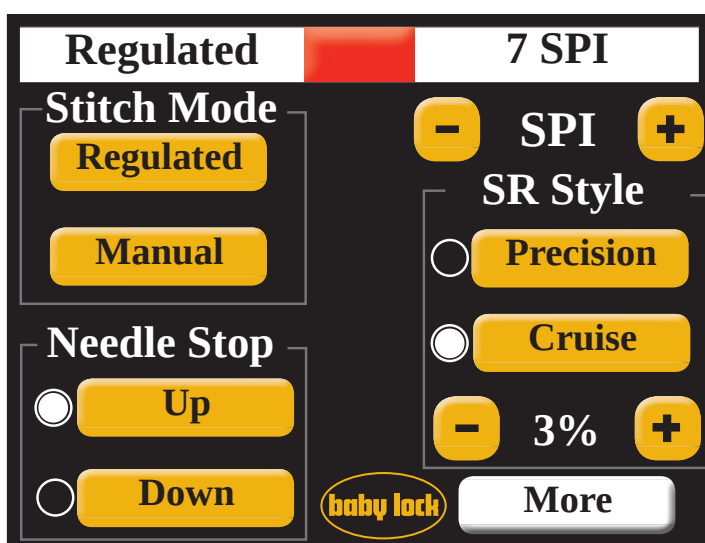
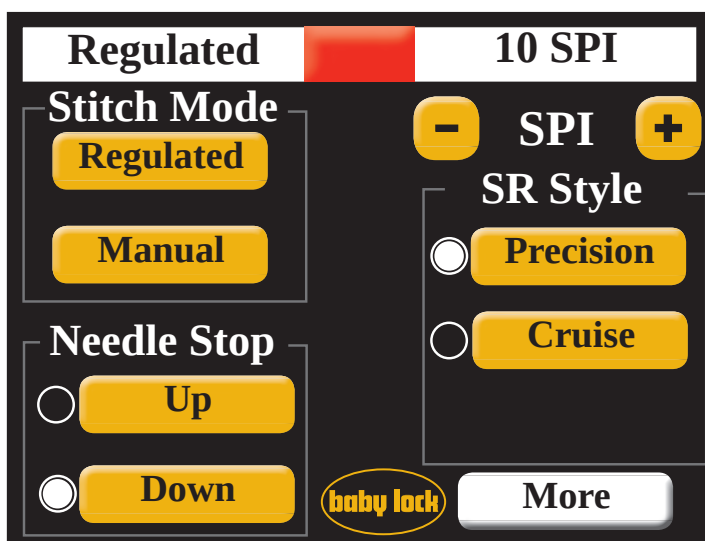


Figure 24

Cruise

When “Cruise” mode is selected, when you press “Start” on the handles the machine will immediately begin stitching at the percent speed indicated below the “Cruise” button. The “Cruise” speed is the minimum speed the machine will stitch, regardless of how slow you are pushing the machine. This means that when you slow down to a stop, the needle will continue stitching at the set cruise speed until you begin moving the machine faster than what the cruise speed is set to or you press the “Stop” button on the handles. The “Cruise” speed can be adjusted using the “+” and “-” buttons that appear below the “Cruise” button when “Cruise” mode is selected. “Cruise” speed can be adjusted between 3% and 50%. (Figure 24)

The start indicator box, which is the box at the top center of the screen, will change from red to green as soon as you press the “Start” button on the handles. If you are in “Precision” mode, the needle will not start moving until you start moving the machine, so this green indicator shows that the “Start” command was accepted and the machine is ready to begin stitching. In “Cruise” mode, the red box will turn to green and the needle will begin stitching immediately at the set “Cruise” speed.

On/Off Indicator

If the machine does not sense that it has been moved in any direction after the Start button has been pressed while in Regulated Mode with SR Style “Precision” selected the Start Indicator box will turn red. This will occur when machine has been idle for approximately two minutes. A system message will appear on the screen to warn user that the machine has stopped. After pressing the “OK” button the warning box will be cleared from the screen. To resume quilting press the Start button. For information on other buttons on this screen, please refer back to the Manual Mode screen.

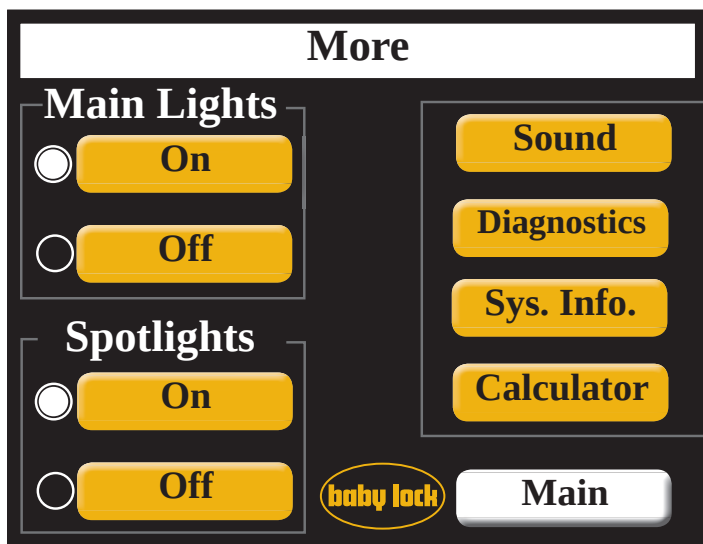


Figure 25



Figure 26



Figure 27



Figure 28



Figure 29



Figure 30



Figure 31

LED Lights

The LED modules in the handlebar are grouped in two sets. One set consists of the three LED modules on each side of the machine, closest to the machine body. These six (total) LED modules are the “Spotlights”. (Figure 25) The remaining modules are the “Main Lights”. There are two boxes on the “More” screen with buttons to turn the “Main Lights” and “Spotlights” on and off as individual groups. The white dot next to the buttons indicate whether the lights are on or off. (Figure 26)

Sound

The “Sound” button activates the screen where the alarm volume can be adjusted. The over-speed alarm can also be turned on and off from this screen. (Figure 27)

Diagnostics

The “Diagnostics” button activates the screen where machine diagnostic functions can be performed. Diagnostic functions are generally only used when working with Handi Quilter Technical Support to resolve issues. (Figure 28)

System Information

The “Sys. Info.” Button provides access to machine information. This includes the machine Serial Number, the hardware and firmware version numbers and the Stitch Counters. (Figure 29)

Calculator

An on-screen calculator may be accessed from the “More” screen. (Figure 30)

Main

Press the “Main” button to return to the “Regulated” or “Manual” menu screen. (Figure 31)

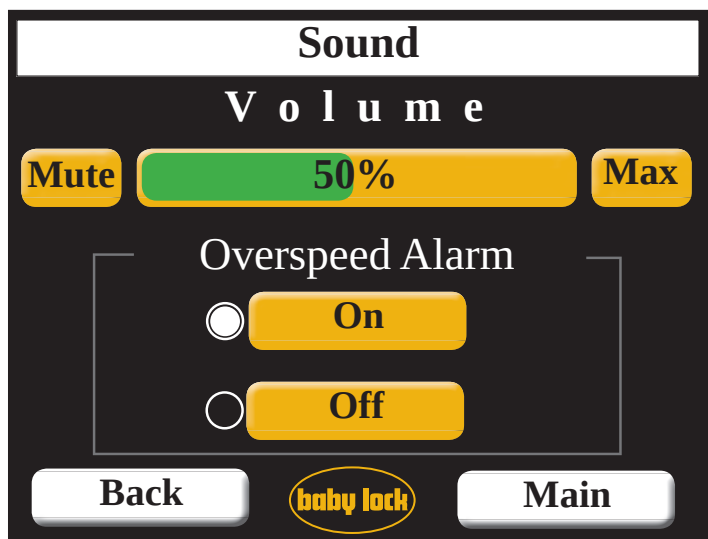


Figure 32

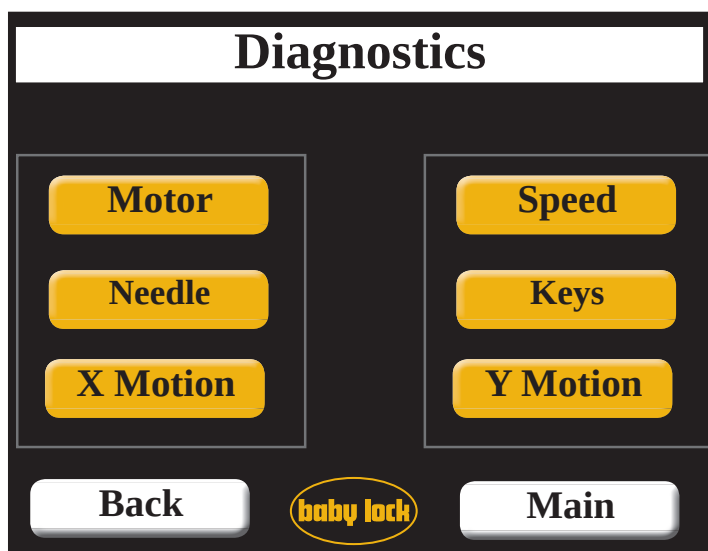


Figure 33

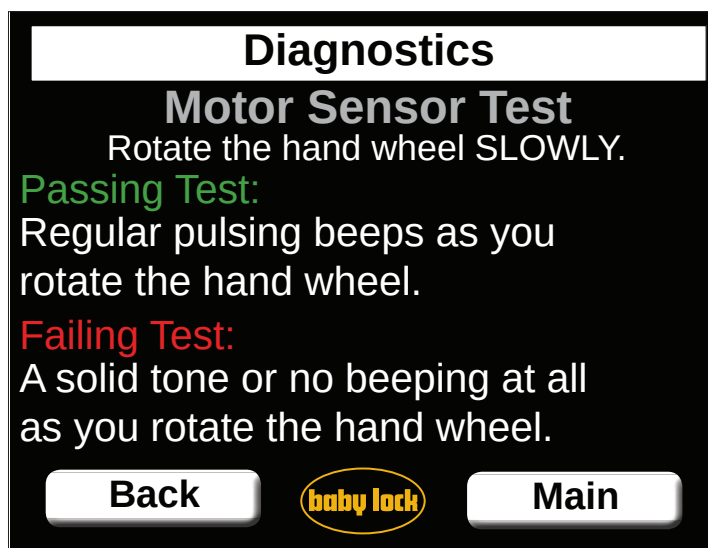


Figure 34

Sound Screen

The “Volume” portion of this screen has two buttons and a sliding control. Pressing on the “Mute” button turns the alarm volume off. Pressing the “Max” button turns the volume to its loudest level. Pressing the sliding control in any position sets the volume to the level indicated in that control. Pressing and moving back and forth across the sliding control will change the volume up as it is moved left to right and down as it is moved from right . The Over-Speed Alarm box allows the user to turn the alarm on and off. (Figure 32)

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

Diagnostics Screen

Six different diagnostics tests can be performed on the machine. These functions test the motion encoders, the motor control functions, the key switches and the internal position sensors. (Figure 33)

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

Diagnostics Tests

Motor Sensor Test

The “Motor” Sensor test can help you determine whether there may be a problem with the Baby Lock Crown Jewel motor. Slowly rotating the handwheel should result in a pulsing audible “beep.” If you get a constant solid “beep” or no “beep” at all, this indicates a failed test and the machine should be inspected by a qualified Baby Lock repair technician. (Figure 34)

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

Needle Sensor Test

The Needle Sensor test will indicate whether the needle position sensor is functioning properly. Rotating the handwheel should result in a “beep” for half of a stitch cycle followed by no “beep” for the other half. (Figure 35 on next page.)

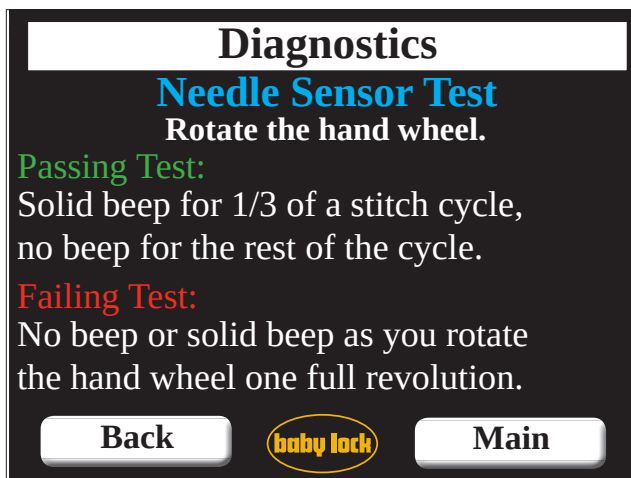


Figure 35

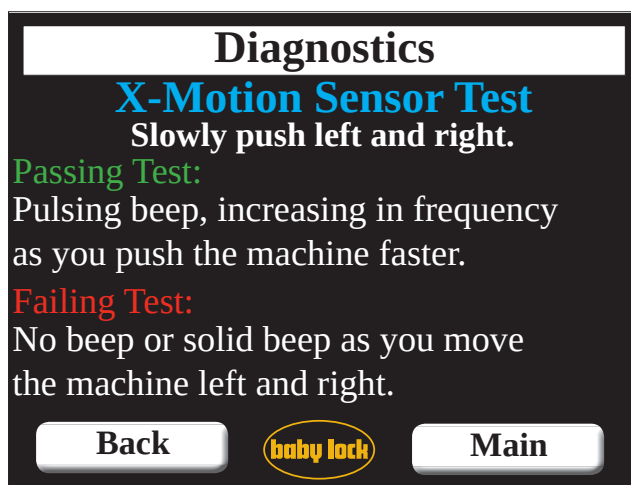


Figure 36

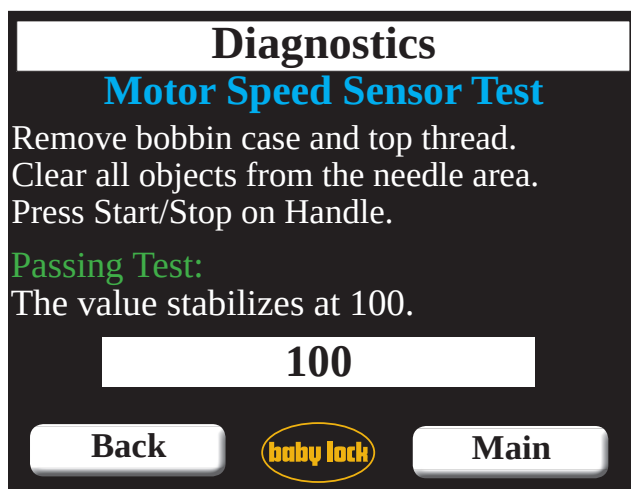


Figure 37

If you hear a constant beep or no beep at all for a full 360° rotation of the handwheel, this indicates a failed test and the machine should be inspected by a qualified Baby Lock repair technician.

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

X Motion Sensor Test

Use the X Motion Sensor test to verify functionality of the “X” stitch regulator encoder (the encoder mounted at the rear of the carriage). As you slowly move the carriage left and right you should hear a pulsing “beep” that pulses faster as you move faster. A solid beep, no beep, or periods of irregular beeping (with constant motion) indicate a problem with the Carriage Stitch Regulator Assembly (X-Motion). The most likely cause of a problem is a stitch regulator wheel that is not making consistent contact with the track. Check the spring tension on the sensor assembly on the carriage to assure that it will easily return to the fully extended position after being compressed. Also assure that the track is straight with no dips or indentations and that it is clean and free of contamination. Other causes are an unplugged or damaged cable or possibly an issue with the main control board. (Figure 36)

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

Motor Speed Sensor Test

The “Speed” Sensor test can help you determine whether or not there is a problem with the Baby Lock Crown Jewel speed sensor. Before performing this test, remove the bobbin case and the top thread. Press the “Start” button and the handwheel and needle bar will begin moving slowly rotating. The white box will show a number that should stabilize at 100 if the sensor is functioning properly. Pressing “Start” again will stop the machine. (Figure 37)

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

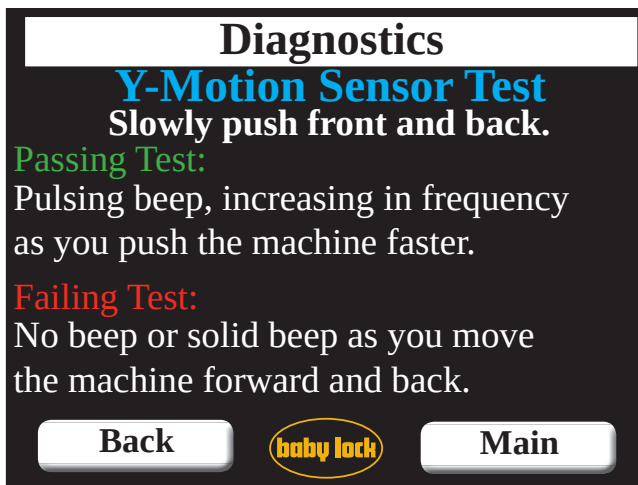


Figure 38

Y Motion Sensor Test

Use the Y Motion Sensor test to verify functionality of the Machine Stitch Regulator (Y-Motion). To view location on machine see #14 on page 7 under Back-side Diagram B.. As you slowly move the carriage toward and away from you, you should hear a pulsing “beep” that pulses faster as you move faster. A solid beep, no beep, or periods of irregular beeping (with constant motion) indicate a problem with the Machine Stitch Regulator (Y-Motion).

The most likely cause of a problem is a stitch regulator wheel that is not making consistent contact with the track. Check the spring tension on the sensor assembly on the machine to assure that it will easily return to the fully extended (down) position after being compressed. Also assure that the track is straight with no dips or indentations and that it is clean and free of contamination. Other causes are an unplugged or damaged cable or possibly an issue with the main control board. (Figure 38)

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

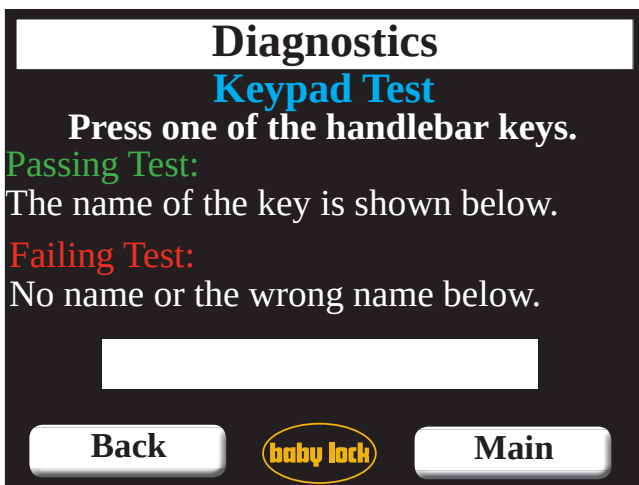


Figure 39

Keypad Test

The Keypad test allows the user to press any of the four keys on the front or back handles to verify that the Baby Lock Crown Jewel is reading the buttons as they are pressed. When a key is pressed the name of the key that is pressed will appear in the white box. When it is released, the name will disappear. Perform this test on the rear display for the rear keys, and the front display for the front keys. (Figure 39)

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

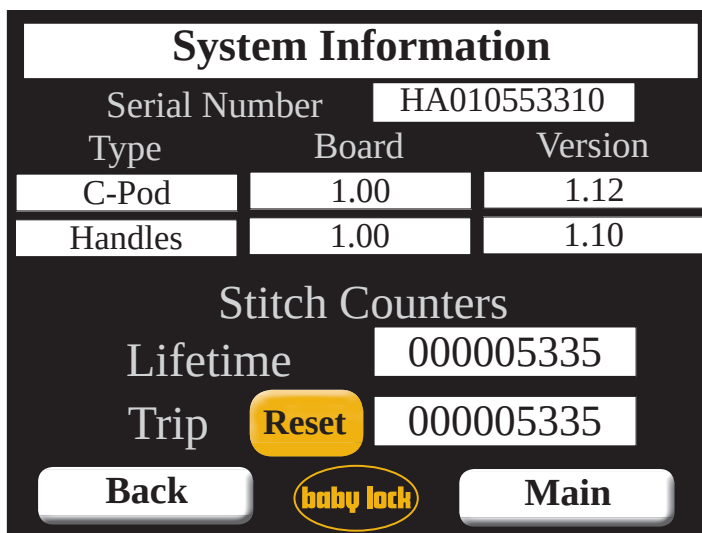


Figure 40

System Information

The serial number of the machine is displayed at the top of the System Information screen. This number matches the one found on the label at the back of the machine under the rear handlebar.

Information contained in the white boxes below the serial number identifies the electronics board version numbers as well as the version numbers of the Baby Lock Crown Jewel and its handlebars. The Lifetime and Trip (or project) stitch counters count the number of stitches the machine has performed. The Lifetime count is the total number of stitches made since the machine was built. The Trip Counter can be reset to keep track of the number of stitches made during a given project. To reset this counter, press the blue “Reset” button just to the left of the white “Trip” box. The Lifetime counter cannot be reset and should be used as an indicator to determine when general machine maintenance should be performed by an authorized Baby Lock Retailer.

(Figure 40)

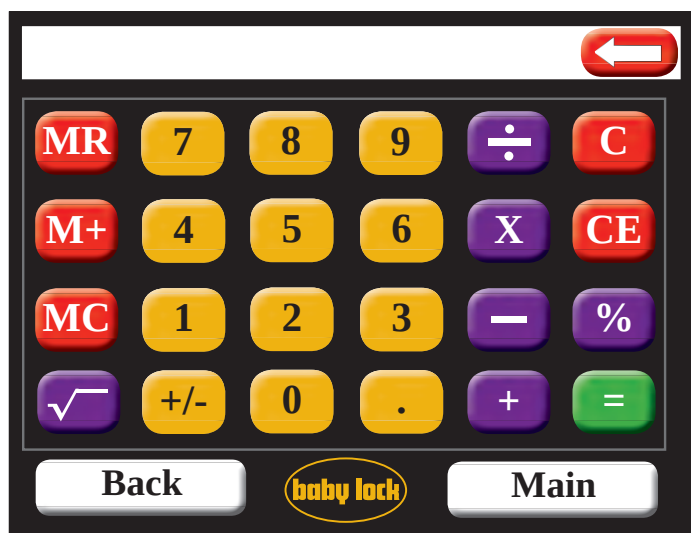


Figure 41

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

Calculator

A basic calculator is provided. (Figure 41)

Press the “Main” button to return to the “Regulated” or “Manual” menu screen or the “Back” button to return to the “More” menu screen.

Baby Lock Crown Jewel Stitch Regulator Setup

In Regulated Mode the status box at the top left of the screen should say “Regulated”. If it says “Manual”, simply press the “Regulated” button on the touch screen to switch from “Manual” mode to “Regulated” mode.

IMPORTANT NOTES ABOUT TURNING STITCH-Regulated ON OR OFF

You can stop the machine at any time by pushing either the “Start/Stop” or the “Needle Up/Down” key on the handles. In **Cruise Regulated** mode, if you don’t move the machine after 3 or 4 seconds, the machine will stop and position the needle. In **Precision Regulated** mode, the needle pauses when you stop moving the machine and will begin stitching again when you start moving the machine. Press the “Start/Stop” (or “Needle Up/Down”) key in Precision Regulated mode to stop the needle completely and cause the needle to position itself in the Needle Up or Down position.

Cruise Regulated Mode

When in Cruise Regulated mode, the start indicator box in the top center of the “Regulated” screen is red. When you press the “Start/Stop” key to start the machine, the indicator will turn green AND the needle will begin moving up and down.

The minimum speed of the needle is dependent upon the setting you choose (from 3% to 50%). Babylock recommends beginning with a setting of 3%.

When to Use Cruise Regulated Mode

The constant minimum stitching speed featured in the Cruise Regulated mode is used for precise placement of stitching when backtracking (such as along the tops of feathers) or when creating sharp points (such as the point of a star or the bottom of a heart).

Precision Regulated Mode

When in Precision Regulated mode, the start indicator box in the top center of the “Regulated” screen is red. When you press the “Start/Stop” key to start the machine, the indicator will turn green. As you start moving the machine, it will begin stitching. When you stop moving the machine, the needle pauses (sometimes in mid-stroke.)

When you press the “Start/Stop” (or “Needle Up/Down”) key to stop the machine, the indicator will turn red, showing that the needle will not move when you move the machine.

Always make sure the indicator is RED when you are in Precision Regulated mode prior to placing your hands near the needle to avoid unwanted stitching in your quilt or personal injury!

If you leave the Baby Lock Crown Jewel in Precision Regulated mode with the start indicator box green and do not move the machine for two minutes, the system will “time-out” and a message box will appear. This indicates that the system has stopped and you will need to press the “Start” button again to resume quilting.

When to Use Precision Regulated Mode

Precision Regulated mode is especially useful for ruler work. Stitch along the length of the ruler for the span of your hand and stop. When you stop moving the machine, the needle pauses. Do not turn off the machine. Move the ruler and commence quilting. The Precision Regulated helps you avoid “bobbles” and uneven stitches.

Quilting Speed While in Stitch-Regulated Mode

It is important not to move the machine too fast, since this will result in an **OVERSPEED CONDITION**, during which, the machine cannot maintain stitch regulated until you slow your motions to an appropriate speed. The Overspeed Alarm will alert you to this condition, giving you the signal to slow down. Stitch regulation does not mean the machine can be moved as fast as you can. Its purpose is to maintain even stitches while quilting at an appropriate speed.

You can return to Manual Mode by pushing the “Manual” button below the “Regulated” button on the touch screen display.

To Begin Quilting

Thread Requirements

Threads have a tendency to dry rot over a period of time. Be sure to choose high quality threads for your valuable heirloom quilts. Most machine quilting threads on the market today are acceptable.

Needle Requirements

For general quilting, a size 16/100 needle will accommodate most threads and fabrics.

Heavier threads, such as top stitch and some decorative threads, require a larger needle such as 18/110 or 20/120. Lofty battings and heavier fabrics such as denim, canvas or densely woven fabric may also require a larger needle.

To Prepare for Quilting

With any quilting machine, it is important to understand the basics of free motion quilting. The Baby Lock Crown Jewel Quilting Machine does not have feed dogs like domestic machines; therefore, the fabric does not automatically feed under the hopping foot. The operator should synchronize the speed as well as the movement of the machine to get an even, consistent stitch.

In order to become comfortable with the free motion of the Baby Lock Crown Jewel, users can begin with a few “beginner” techniques. In Manual Mode: Set the machine at a medium speed and begin moving it until you become accustomed to the resistance. By moving the machine faster, the stitches begin to elongate. The stitch speed can either be increased or the machine can be moved slower to get the stitches back to the desired length. By moving the machine slower, the stitches get shorter and can build up on top of each other, breaking the thread or making it extremely difficult to unpick. The stitch speed can be decreased, while maintaining a constant motion with the

machine to bring the stitches back to the desired length.

In Regulated Mode: Set the machine to desired stitch length. Begin moving the machine to become accustomed to the resistance. The machine motor will slow down or speed up to maintain a consistent stitch length according to how quickly or slowly you move the machine. Moving the machine too fast or in radical or jerky movements will defeat the stitch regulator function.

In MANUAL or CRUISE REGULATED mode, when pressing the “Start/Stop” key on the front or rear handle bars to begin quilting make certain to begin moving the machine immediately. If the needle stitches in one place too long, the stitches build up on top of each other causing a build-up of thread or thread breakage. When bringing the machine to a complete stop press the “Start/Stop” key at the same moment the machine stops moving. If the machine is still moving when the “Start/Stop” key is pressed, it can cause deflection in the needle, possibly causing it to bend or break.

In PRECISION REGULATED mode, the needle will not begin moving when you press the “Start/Stop” key until you begin moving the machine.

When quilting, relax your hands and maintain a light touch on the handlebars. Gripping the handlebars too tightly may cause body tension resulting in poor quilting quality. The Baby Lock Crown Jewel, combined with the Grace Pinnacle Frame system will give you a smooth even glide.

Troubleshooting

Problem	Cause	Correction
STITCHES ARE SKIPPING	The needle is damaged, dull, bent, or installed improperly	• Replace the needle often, normally once or twice per day for continuous quilting or at least once per quilt. Use only needles authorized by Baby Lock. • Always change the needle if the needle has struck any hard object such as a straight pin, etc. The tip of the needle can become damaged or burred, resulting in fabric damaged as well as skipped stitches and thread breakage. • Always change the needle if it has been hit, bumped or pulled off center while maneuvering the machine about the quilt. A slightly bent needle can be a major cause of skipped stitches.
	Incorrect needle size	• Check for the proper size of needle for the work and thread being applied to the quilting operation. Some battings and fabrics used in quilting may constrict or impede the thread passing through the front groove of the needle. This diminishes the loop lift required for stitch formation. Typically, a larger needle will solve the problem; however, it has been found that certain smaller sizes of needles as well as the use of ball pointed needles solve some specific problems.
	The needle has not been positioned properly	• Position the needle properly to the needle bar. Inspect the position of the needle to make sure that the needle is at the 6 o'clock position. If you stand directly in front of the needle (facing the bobbin case side of the machine), you will see the entire needle eye directly facing you. This is 6 o'clock position. For most needle and thread combinations this is the correct position. However, if you find your thread is shredding, you might try positioning the needle to 5 o'clock. If it is skipping stitches, try rotating the needle eye to 7 o'clock. • 7 o'clock is the maximum tolerance for rotation. Make sure the needle is installed all the way into the needle bar to the needle stop hole in the needle bar and the long groove is toward the front (bobbin case side) and the scarf/scooped out part is toward the handwheel.
	Fabric is too tight on the frame	• Loosen fabric on the frame. Fabric that is rolled too tight causes the fibers to separate. This reduces the needle friction on the thread resulting in a smaller thread loop and may cause skipped stitches.
	Upper tension too tight	• Loosen upper tension.
	Improper threading	• Inspect that the thread take-up lever, thread stirrup or tension spring are all threaded correctly and that the thread is "flossed" into the tension discs.

Problem	Cause	Correction
THE NEEDLE BREAKS	The needle is bent or not installed properly	• Replace or correctly change the needle. Make sure that the needle is pushed up into the needle bar clamp until it can go no farther (visually check that it is up to the top of the stop/sight opening above the needle bar clamp screw). Failure to do so can cause damage in the bobbin area and throat plate.
	The needle hits the throat plate	• Correctly position the needle, throat plate or hopping foot.
STITCHES ARE PUCKERED	The tension is not balanced	• Balance the tension of the needle thread after ensuring the bobbin tension is adjusted correctly (refer to page 20).
	Needle too large for material	• Replace the needle with a size better suited for the fabric.
STITCH QUALITY IS POOR	The tension is not balanced	• Adjust the tension of the needle thread if it is not balanced with that of the bobbin thread.
	Bobbin case is damaged, corroded, dirty, etc.	• Since thread slides over the surface of the bobbin case at a high speed, make sure the case is free of any material that could impede thread passage through the machine.
	Moving the machine too fast for needle speed selected	• Synchronize machine movement and needle speed to get roughly 8-10 stitches per inch. Elongated stitches are an indication of moving the machine too fast for the current speed.
	Machine Stitch Regulator wheels do not consistently touch the track	• Clean the track and the rubber wheel on each stitch regulator. Even a tiny speck on the wheel can cause problems with regulation. Check the spring tension on each stitch regulator assemblies. If the retaining nut is even slightly too tight it can prevent the wheel from properly pressing against the track.

Problem	Cause	Correction
TENSION IS POOR	"Fuzz" caught under the tension spring in the bobbin	• If using short staple threads, inexpensive or industrial threads or coated threads, lint and other material will build up under the tension leaf spring and begin to lift the spring, reducing the spring's ability to compress against the thread. By inserting a needle under the spring and clearing out the lint, the bobbin tension will return fairly close to its preset tension.
	Poorly wound bobbin	• If the bobbin is wound too tight or too loose, this can lead to poor and inconsistent tension. Make sure when the bobbin is wound that the thread tension is not so tight that the wound bobbin thread feels hard and causes the bobbin to bulge when it is wound. It should also not be so loose that the thread is spongy, causing the thread to tangle as it is wound.
HANDWHEEL WON'T ROTATE	Thread is entangled and caught in the hook	• Turn off and unplug the machine from the electrical outlet. Remove the needle plate to improve visibility. Remove any visible loose threads. Lubricate the hook, forcibly turn the handwheel clockwise and if necessary counterclockwise several times, and then remove the thread caught in the hook.
HARD TO GUIDE MACHINE	Carriage wheels not centered on track	• Center the carriage wheels on top of the continuous track. Check that the machine carriage has not "jumped" the track.
	Thread caught in wheels	• Remove all thread or debris in wheels. Check that the tracks are free of all lint, threads and dust from chalks (if applicable).
	Table not level	• Level table.

Troubleshooting continued

Problem	Cause	Correction
HOPPING FOOT WON'T CLEAR SEAMS	Quilt sandwich is too thick (i.e. denim with thick batting)	Decrease the pressure on the hopping foot by loosening the nut at the base of the hopping foot shaft. Adjust to the proper height. IMPORTANT NOTE: When tightening the nut on the hopping foot shaft be careful not to tighten so tight that it rotates the bar. Remember to readjust back to normal height after quilting the thick quilt. Take note of how many times you rotated the foot up to accommodate the thick quilt. When finished, rotate the foot back down the same number of times to bring it back to the optimum setting.
THREAD NESTS UNDER QUILT	Not enough tension on top thread	Check that the machine is threaded correctly. Make certain that thread is “flossed” snugly in place between the two tension discs. If machine is threaded correctly, tighten top tension by rotating the tension knob clockwise.
	Improper threading	Refer to threading diagram and threading instructions (page 16).
MOTOR FAILS TO RUN	On/Off switch turned off	Turn the machine on by using the switch on the back electrical control cover.
	Machine not receiving power	Check that the power connector is plugged into the back of the machine and the three-prong end is plugged into power source
UNEVEN QUILT DESIGN	Take-up rollers may be bowed or bent	Make certain that the fabric is not rolled too tight, causing the fabric to stretch. Check that poles overlap and snap together with the snap button so bowing won't occur.
	Leaders are stretched/worn	If fabric is beginning to stretch or fray, contact your authorized Baby Lock retailer for replacement leaders.
IRREGULAR STITCHES	Long and short stitches in Regulated Stitch Mode	Check that all cables are connected tightly.

Problem	Cause	Correction
MOTOR STALL	Motor Stall	• The alarm indicates that the motor is not responding properly to the speed controls. This may be caused by a thread lock, mechanical obstruction or an electrical problem. • Clear any thread from the bobbin area <i>only</i> after turning off the power to the machine. • Turn the handwheel and check for tightness. • The motor stall may re-occur if it is caused by an electrical problem. Turn the machine off and then back on again to reset the computer.
NEEDLE THREAD BREAKS	Thread cones/spools may have abraded thread casing, severe twisting or thread rot Top and bobbin tensions not balanced The machine head has been threaded incorrectly or thread spools are not positioned correctly Particles in tension discs Bobbin rotation is not smooth Needle is burred, bent or dull, or installed incorrectly Needle not suited for thread	• Look for severe twisting of threads when approximately 12 to 15 inches has been pulled off, with the ends pinched together. Cotton threads are particularly susceptible to dry rot or wet rot which makes thread brittle. • Test and set bobbin tension following instructions on (page18). Next, set top tension following instructions on (page 20). • Check that the machine is threaded correctly. • Inspect for accidental double wrapping of thread on thread guides. • Inspect the thread mast, making sure that the eyelets of the mast are directly over the spools. • Inspect the vertical positioning of the thread cones. Tipped cones can dramatically affect thread tension and can cause breakage. • Inspect for particles and remove any fuzz or debris. • Make sure the bobbin is wound smoothly. If it appears to be okay, then change the bobbin. The slightest hesitation of the bobbin rotation can be the cause of dramatic tension change and thread breakage. • If needle shows damage, replace needle immediately. Make sure the needle is installed to the top of the stop/sight opening in the needle bar. Change the needle at least once per quilt. • Replace the needle to one better suited for the thread. Use the proper size needle.

Troubleshooting continued

Problem	Cause	Correction
NEEDLE THREAD BREAKS (continued)	Hesitating too long at one point in pattern	• Move more quickly so stitches don't overlap or build up. When starting the machine, begin moving immediately. Sewing in one place too long will cause the thread to break or nest.
	Improper needle/hook relationship	• Timing-consult a repair technician.
	Damage or "Burr" at needle hole of throat plate or other thread handling part.	• If thread is shredding at the throat plate, check for burrs or jagged edges. Gently rub with metal cloth to remove the sharp edge. Consult a repair technician to polish any hard to reach or delicate areas, or if the burr is inside the throat.
	Wrong type of needle	• Use needles recommended by Baby Lock. Using the wrong needle with a smaller shank diameter causes many problems.
	Other possible problems:	• Needle too close to hook, causing friction and possible collision of hook point and needle, (broken thread). • Needle plate damage. Hook damage. • Broken needles or damaged needle bar clamp.
NO VISIBLE DISPLAY	Cable unplugged	• Check the communication cables that connect the handlebars to the casing of the machine to make sure they are secure.

** If the troubleshooting above does not eliminate the problem, please consult your authorized Baby Lock Crown Jewel retailer.*

Variable-Speed Bobbin Winder

Bobbin Winder Parts

- A. Thread-stand base
- B. Thread mast
- C. Spool pin
- D. Pre-tension assembly
- E. Tension discs
- F. Split post
- G. Power switch
- H. Variable-speed knob
- I. Bobbin-winder-shaft oiling point
- J. Phillips screw for bobbin capacity adjustment
- K. Phillips screw for bobbin even-fill adjustment

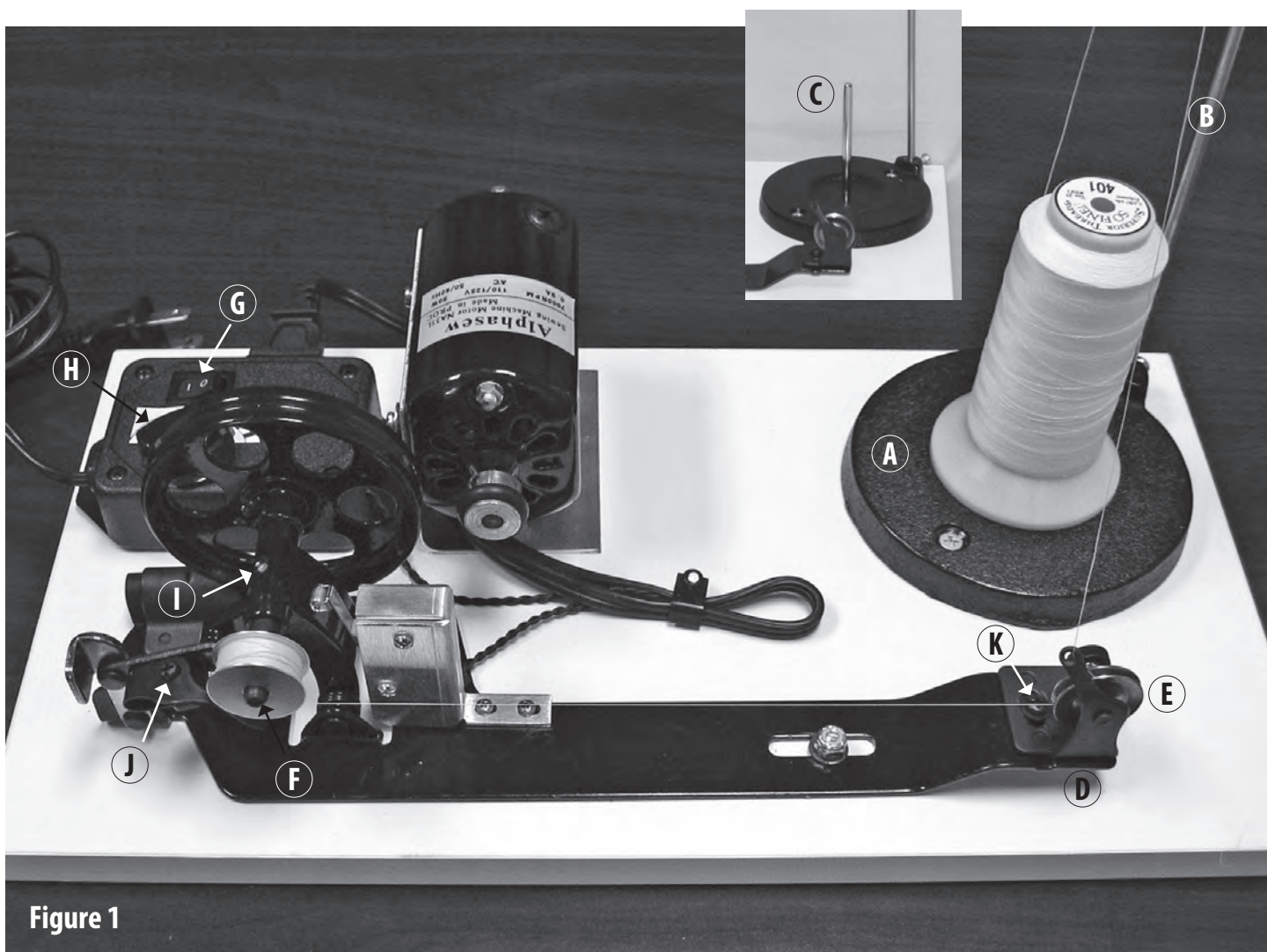


Figure 1

Bobbin Winder Instructions

1. Loosen the small screw in the thread stand base. Install the thread mast, making sure the top of the mast is centered over the silver spool pin, then tighten the small screw (**Figure 2**).

NOTE: If the mast is not centered over the spool pin, thread may catch on the side of the spool and negatively affect the bobbin wind and/or break the thread.

2. Place the thread on the silver spool pin, pull the thread up and through the thread mast. Pull the thread down through the guide hole on the pre-tension assembly, going from the outside in (**Figure 3**). Guide the thread between the tension disks and pull thread to the bobbin (**see arrows**).

NOTE: The tension discs have been pre-set and tested during manufacturing to ensure that the bobbin winds evenly and firmly. If set too loose, the thread may tangle and if too tight, winding may warp the bobbin, making the bobbin too high for the bobbin case and preventing successful sewing.

3. Push bobbin securely on the split post.

NOTE: This should be a tight fit—if too loose the bobbin will slip and wind unevenly causing inconsistent wind and tension issues.

Wrap thread around bobbin clockwise for several rotations (**Figure 4**). Dial the variable-speed knob to the right of center (**Figure 5**), then push the power switch down into the “I” position. (“O” is off and “I” is on.)

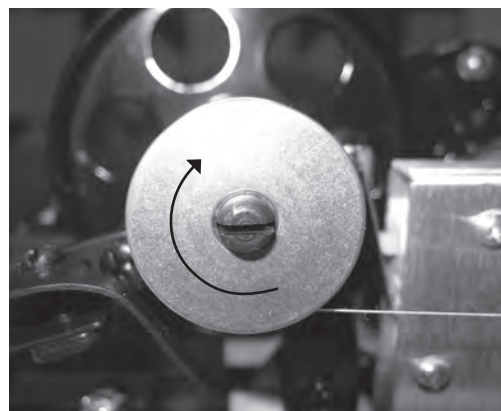


Figure 4



Figure 5



Figure 2



Figure 3

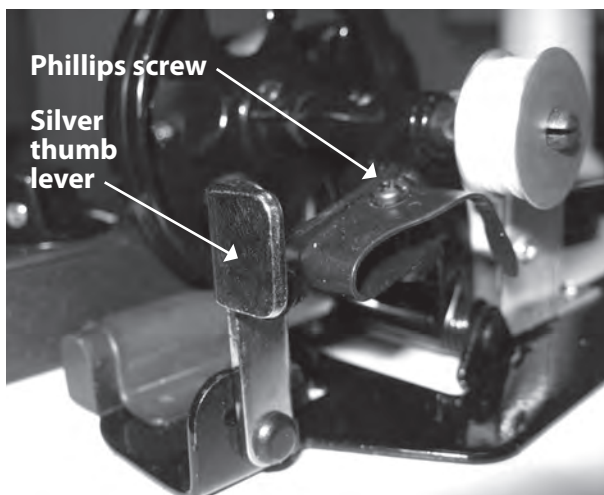


Figure 6

Push the silver thumb lever down toward the bobbin and the motor will engage (**Figure 6**). When the bobbin is full the motor will automatically shut off.

NOTE: The variable speed should be set slower for more delicate or stretchy thread for proper winding. For even winding do not change speed during bobbin winding.

If necessary to adjust bobbin capacity, tighten the phillips screw (**Figure 6**) on the thumb lever stop spring clockwise for more thread, turn counter-clockwise for less thread. If bobbin is winding unevenly, adjust by loosening phillips screw on pre-tension assembly (**Figure 1, #K page 37**), and sliding the assembly left or right until proper fill is established. Tighten screw.

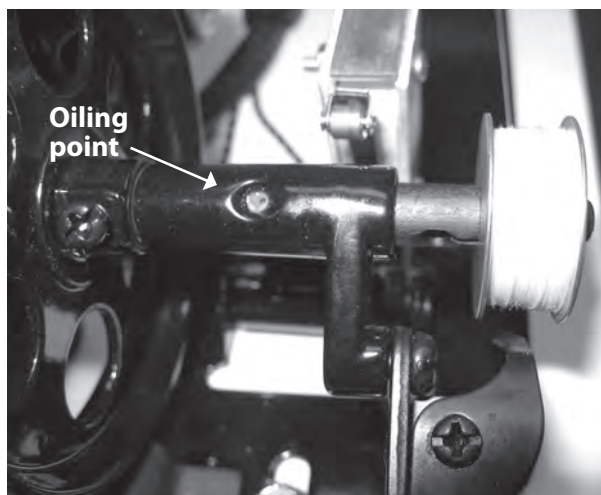


Figure 7

SERVICE: The bobbin winder shaft is factory lubricated with synthetic grease, however if it becomes dry or noisy you will need to lubricate with your machine-hook oil. Oil sparingly and cover the oil hole with a paper towel. Run for 10 seconds before winding a new bobbin to avoid getting oil on your thread (**Figure 7**).

WARNING: Never leave bobbin winder running unattended. To reduce the risk of burns, fire, electric shock or injury to persons, use this machine for its intended use only. Do not allow this machine to be used as a toy or by unsupervised children.

Optional Accessories

Channel Lock

Place the channel lock on either of the front wheels of the machine as shown in **(Figure 1)** (not on the carriage wheels). This will lock the wheels so that the machine carriage will move from right to left but not forward and backward. The purpose for the horizontal channel lock is to stitch horizontal straight lines across your quilt.



Figure 1

Ruler Base

Using rulers with a quilting machine requires a wider base than the machine has. The ruler base provides a stable base for ruler work.

Installing the Ruler Base

Bring the ruler base to the front of the machine, straddling the needle bar. Line up the four notches in the ruler base with the four protrusions on the machine. Using both hands, grasp the ruler base on both sides and flex upwards to spread the base apart far enough to place on machine **(Figure 2)**. Snap into place.

Removing the Ruler Base

Leaving the ruler base in place would cause undesirable drag on the quilt for free-motion quilting. Remove the ruler base by gently flexing the base upwards, until the notches are free **(Figure 3)**. Lift away from the machine.



Figure 2



Figure 3

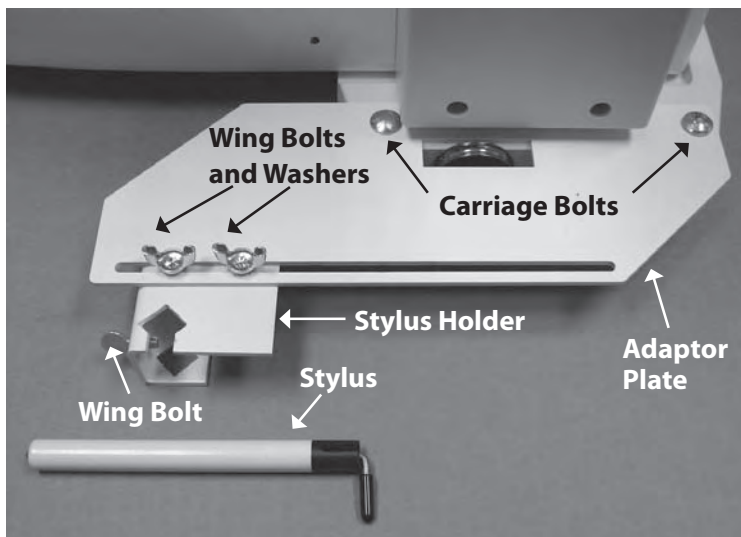


Figure 4

Stylus and Adaptor Plate

A stylus is used to follow the grooves of pattern boards. It is attached by an adaptor plate to the machine's rear base plate on the right side of the machine (when you are facing the front of the machine). The machine's rear base plate has two holes pre-drilled on the right side to accommodate the stylus holder (**Figure 4**).

Installing the Adaptor Plate

To attach the adaptor plate, lay the machine on its left side and place the adaptor plate over the two square holes, with the rectangular hole over the wheel. Place the two carriage bolts down through the adaptor (the square holes are for locating and holding the carriage bolt head during tightening). Attach with the two lock nuts on the bottom of the machine's base plate (**Figure 5**) and tighten until the bracket is firm and does not move. Lift the machine upright and place back on the carriage for the next step.

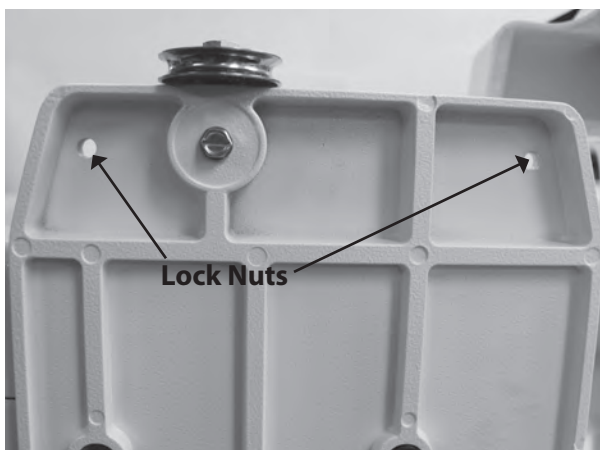


Figure 5

Installing the Stylus Holder

The stylus holder has two threaded holes. Place the stylus holder under the adaptor plate and align the two holes with the long slot in the adaptor plate. Place the two wing bolts with washers first through the slot and then thread into the stylus holder as shown (**Figure 6**). Note that the stylus holder is mounted under the adaptor plate and that the stylus opening and remaining wing bolt goes towards the front of the machine as shown.

Installing the Stylus

The stylus is mounted into the stylus holder and secured with the thumb screw which faces the front of the machine (**Figure 4**). The height of the stylus is set once the pattern board is set onto the table.

With the thumb screw loosened slightly, lower the stylus so that the stylus tip will go into and stay in the groove as the machine is moved (**Figure 7**). Tighten the thumb screw.

If the stylus is set too high, it can inadvertently come out of the groove while quilting. If set too low, it will cause unwanted resistance during quilting and will wear the stylus tip prematurely. Please note that the stylus is a consumable part. The tip will eventually wear down and the stylus will need to be replaced.



Figure 6

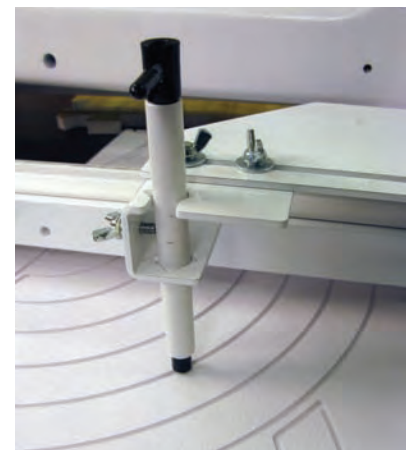


Figure 7

Optional Accessories continued

Horizontal Spool Pin

- 1.** An optional horizontal spool pin is available for metallic and specialty threads wound on a spool (not a cone).
- 2.** The horizontal spool pin mounts in the laser stylus guide post on the top of the machine (see **Figure 8**).
- 3.** When using delicate threads such as mylar, certain metallics or very thin silk, on the horizontal spool pin, skip thread guide A. Thread the top hole only, of the three-hole thread guide B, back to front.
- 4.** Continue threading the machine as explained in steps 3 through 7 on pages 16 and 17.



Figure 8

Crown Jewel Micro Handles

Enjoy complete precision while long arm quilting. These centralized, adjustable handles fit perfectly in between the existing handles on the Crown Jewel for the ultimate control during micro-stippling or close-up work.

The Micro Handles include fully integrated built-in buttons, keeping all stitch controls at a quilter's fingertips. The Micro Handles also include an additional LED light, providing extra illumination to even the smallest areas.

